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Original Communications.

PRACTICAL LESSONS FROM AN EXPERIENCE OF MORE THAN ONE HUNDRED CASES OF ECLAMPSIA.

BY BARTON COOKE HIRST, M.D.,
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In the University Maternity we have the records of fifty-four cases of eclampsia. In ten years' service in the Maternity Hospital, in seventeen years' service in the Philadelphia Hospital, in private and consulting practice, I have seen an equal or greater number. Certain facts stand out from this experience which should be emphasized at present, I think, in view of the prevalence of theories not reconcilable with clinical observation nor with the best treatment of the patient.

There are three phases of the subject on which clinical experience throws a valuable light: etiology, the premonitory signs, the preventive and the curative treatment.

It is not the purpose of this brief communication to enter the maze of theories about the etiology of eclampsia: whether the disease depends upon an embolism of placental cells; upon cytolysis of the syncytium, the consequent production of a toxin, and the failure of the organism to produce an antitoxin; upon deficient work on the part of the liver in the reduction of the products of metabolism, and of excess nitrogenous food to urea; upon hyperactivity of the suprarenals or de-

ficient activity of the thyroid; upon resorption of toxins due to microbic infection, is not yet demonstrated. There is no theory yet advanced which has the same basis of common sense and is in such accord with clinical observation as the long-accepted view that the products of fetal metabolism discharged into the maternal blood and eventually eliminated by the maternal kidneys are the chief predisposing cause of eclampsia, and that insufficient elimination by the maternal kidneys is the chief exciting cause. Dienst, one of the latest investigators[1] of the subject, has come back to this view and says, with scientific circumlocution, what the clinician has been saying for a generation. Anything which throws extra work on the kidneys, as a heavy nitrogenous diet and deficient activity of the skin and bowels, anything which impairs the functional activity of the kidneys, as the congestion of an acute nephritis or pressure upon the ureters, is well known to determine an eclamptic attack. As a rule, eclampsia is a disease only of late pregnancy with a living fetus, and is about ten times more frequent in twin than in single pregnancies, showing the probability, at least, of the fetal origin of the toxins of the disease. It is true that rare exceptions to this general rule are observed. Eclampsia has occurred as early as the second month of gestation and as late as six weeks after delivery. But it is open to question whether these cases were not ordinary uremic convulsions. I have a patient in the maternity at present who has had convulsions in two successive pregnancies at the third and at the fourth month, but she has advanced nephritis, and her convulsions are such as might occur in any nephritic subject, whether she is pregnant or not. No doubt the irritability of the cortical cells in the brain, characteristic of pregnancy, had already developed in the woman and determined the convulsive rather than the comatose form of uremia in her.

An argument often advanced against the responsibility of the maternal kidneys for eclampsia is the alleged fact that women with nephritis are not liable to eclampsia. One set of German statistics is frequently quoted to the effect that only five per cent of nephritic subjects in pregnancy develop eclampsia. The way in which these statistics are exploited by the supporters of some of the newer theories to account for eclampsia would, it seems to me, lead the inexperienced to believe that disease or impaired functional activity of the kidneys in pregnancy may be regarded with entire indifference. No view could be more incorrect or more harmful to our patients. It is not true that women with nephritis are not disposed to eclampsia. The reasons why a comparatively small percentage of them actually arrive at the convulsive stage of the disease are that abortion, miscarriage, and premature death of the fetus is the rule in the nephritis of gravid women; that the signs of toxemia appear so early and are so marked as often to call for the artificial termination of pregnancy; that such patients are subjected to an unusually careful dietetic and other treatment; and that a long-continued imperfect elimination has made the organism tolerant to toxins. It has been my experience that pregnant women with nephritis or with a predisposition to nephritis by heredity almost invariably demand active treatment to combat a gestational toxemia, and usually require a premature termination of pregnancy. There is nothing, therefore, in the clincal observation of nephritis in pregnancy to shake our belief in insufficient renal activity as a cause of eclampsia, and we should hold fast to the lesson taught by many a bitter experience that nephritis in pregnancy is one of the gravest complications, demanding constant care and never to be regarded with indifference.

Among the premonitory signs of eclampsia there is nothing comparable in value to the experienced physician with albumin in considerable and increasing quantities in the filtered urine. It is true that a certain proportion of cases occur without precedent albuminuria, but their proportion is not nearly so large as one would infer from the report of sporadic cases with which recent medical literature is filled. In all my cases there were only two in which albumin was absent. In one of these the post-mortem examination

[1]Herzfeld, from an experience of 81 autopsies on eclamptic subjects, unqualifiedly declares that insufficient renal excretion, due to a diseased condition of the epithelium, is the cause of eclampsia (*Centralbl. f. Gyn.*, 1901, No. 40). Bar found the kidneys diseased in every one of the cases he examined (*L'Obstetrique*, 1903).

showed a chronic nephritis dating from an attack of scarlet fever five years before. In a recent report of 322 cases of eclampsia from the Charité in Berlin albumin was absent in only six. There is no other symptom of a gestational toxemia and threatened eclampsia so constant and characteristic as this. The urea excretion is valueless in comparison. Pregnant women excrete anywhere from three to over thirty grammes a day, but usually less than the normal twenty to twenty-four grammes. I have repeatedly seen a very low output without the slightest disturbance of health, and occasionally a rapidly increasing toxemia with an excretion of more than thirty grammes. Any one who is ill advised or inexperienced enough to attach much importance to urea elimination as a sign of gestational toxemia or threatened eclampsia will be constantly making blunders in diagnosis and treatment.

Casts other than hyaline should of course be looked for, but their quantity cannot be measured; they usually accompany albuminuria, increasing with the increase of albumin and disappearing with its decrease, so that their presence and number do not give the clinician as valuable a guide to the requisite therapeutic measures as the quantity and increase of albumin. It is a clinical rule with few exceptions that albuminuria precedes the other signs of gestational toxemia, that the gravity of the woman's condition can be measured by the steady increase in the amount of albumin in spite of treatment, and that a steady and rapid increase of albumin is the most certain and constant premonitory sign of eclampsia that we possess at present. A disregard of this clinical rule is apt to be disastrous to the patient and detrimental to the physician's reputation; yet the impression created by much of the recent literature on the subject, it seems to me, is that albuminuria is unimportant as a danger-signal in pregnancy—a view largely theoretical and speculative that cannot be based on sufficient clinical experience. One factor contributing to this view is the use lately of delicate and unreliable tests for albuminuria. Potassium ferrocyanide, among others, gives a reaction with albumin, with albumoses, etc., giving the impression that albuminuria is much more common in pregnancy and less serious than is really the case.

The preventive treatment is based by every one, I think, on the theory of kidney inadequacy, whether the individual authority accepts that theory or not. It consists, as we all know, of a milk diet, diaphoresis, diuresis, and catharsis, with extra precautions against chilling the skin. The use of thyroid extract as proposed by Nicholson is still on trial. I propose to make a study of it in the maternity.

The curative treatment is too large a subject to be treated *in extenso*. Certain disputed points, however, are open to discussion, and on no division of the whole subject is clinical experience so safe a guide. The most important therapeutic measure on which there is still a difference of opinion is the obstetrical treatment of eclampsia in pregnancy and labor. The views as to the necessity of a rapid evacuation of the uterus are widely divergent. It is easy to understand the feeling which prompts a resort to *accouchement forcé* in eclampsia. The fetus *in utero* seems to be the cause of the eclampsia; the intra-abdominal pressure of advanced pregnancy is an embarrassment to the kidneys; as demonstrated by Herzfeld, a large proportion of the cases are due to pressure on the ureters; there is a general belief that eclampsia is less dangerous after delivery than before, and there are numerous clinical records of convulsions ceasing with delivery and not recurring. I entered on practice firmly convinced that the rapid evacuation of the uterus was the proper treatment, and I have twice reverted to this view, but increasing experience forces me to the conclusion that it is erroneous. The operative procedures necessary, even with the aid of such an excellent instrument as Bossi's dilator, are often followed by injury and shock which an eclamptic patient cannot well endure. I have seen deaths from this cause that might perhaps have been averted by a more conservative treatment. Moreover, recent statistics show that postpartum eclampsia is very little less dangerous than antepartum or intrapartum convulsions, and that the proportion of cases in which convulsions cease after labor is smaller than is generally supposed. After an extended and repeated trial of both plans, I am better satisfied with the treatment directed solely

to the eclampsia without regard to the uterine contents, until such a degree of dilatation of the os is secured spontaneously that delivery can easily be secured without violence. In antepartum eclampsia evacuation of the uterus is only indicated if, after the eclampsia is controlled, the patient's urine is persistently albuminous and filled with casts, or if other symptoms of gestational toxemia continue to a degree that excites anxiety. In such a case it is better, if possible, to induce labor slowly by bougies or the Voorhees bags rather than to resort to a forced delivery. Meanwhile the eliminative treatment by diuresis, catharsis, and diaphoresis should be actively employed. It necessarily follows that any one holding these views cannot approve of Cæsarian section for eclampsia. There is no treatment of the disease with such a high mortality except the pilocarpine treatment. One has a mortality of over 40, the other of over 60 per cent.

As to the treatment of the convulsions, it is well understood that we must employ two sets of remedies: one to eliminate the poison, the other to quiet nervous irritability and muscular activity. It is generally agreed that normal salt injections, sweats, and purgation are the most reliable measures under the first heading. Diuretics during eclampsia are of no use, because the kidneys during the attack are practically non-existent as excretory organs. There is usually anuria or a scanty quantity of bloody, albuminous urine, in which, by the way, the percentage of urea is often normal for a pregnant woman. Venesection should be classed among the eliminative measures; but after resorting to it almost routinely at first, I now rarely do so. Among the sedatives, chloral and opium dispute the field. I confess to a prejudice against the latter, because it antagonizes the eliminative treatment, and there is, it would seem, danger of fatal poisoning from the large doses required, in view of the inactivity of the kidneys. The experience of my colleague, Dr. Tyson, who saw fatal poisoning in a nephritic subject from a drachm of paregoric, is always present in my mind. For the relief of the arterial tension and spasmodic contraction of the arterioles we have always used veratrum viride. An experience of twenty years with it confirms the good impression originally conceived. Nicholson's arguments in favor of thyroid extract in five- or ten-grain doses for the same purpose are plausible, and I intend to give it a trial; but there are cases in which the ingestion by the mouth of five-grain tablets would be difficult or impossible.

Finally, I would urge the advantages of treating eclampsia in a well appointed hospital. Nothing is more disheartening than the inadequacy of this treatment observed, in consulting practice, in private houses. If cases of eclampsia were transported in an ambulance without delay to a hospital well appointed for their treatment, and with a staff thoroughly drilled in the management of such cases, the mortality could be kept at or under 13 per cent, which is less than half what it is in private practice. In other words, a patient would have more than double the chance of recovery that she has in her own home.

SURGICAL TREATMENT OF RECENT FRACTURE OF THE PATELLA.

By Edward Martin, M.D.,
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AND
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Sesamoid bones are developed in tendons, which exert much pressure on the bony surfaces over which they glide. In the tendon of the quadriceps extensor femoris, the largest muscle of the body, and in that portion exposed to the greatest and most continuous pressure, we find the largest and best developed sesamoid bone in the body, the patella.

This muscle, made up of four powerful portions, the rectus femoris, crureus, and two vasti, has an extensive origin from nearly the whole surface of the femur, from the intermuscular septa of the deep fascia, and, through the rectus, from the pelvis.

In marked contrast to its extensive origin is its very limited insertion, by the ligamentum patellæ, into the tubercle of the tibia. At this point it is about an inch wide and a quarter of an inch thick. The patella is enveloped in this tendon, its lower border being about two or three inches above the tubercle.

As the biceps at the elbow may be said to have a second insertion into the deep fascia of the forearm by means of the bicipital fascia, so the quadriceps may be said to have a second insertion, more powerful than that of the biceps, into the deep fascia of the leg; in other words, it has an expanded insertion represented by its so-called lateral expansions. These extend as far as the lateral ligaments of the knee, and pass below into the deep fascia of the leg, being attached to the front of the tuberosities of the tibia.

On the inner side one can follow, on close inspection, the tendinous fibers of the vastus internus, which is larger and reaches lower than the vastus externus, as they pass outward and downward to the side of the patella, the innermost fibers reaching it at its lower end. On the same side, passing inward and downward, from the same side of the patella, a second layer of equally strong fibers may be seen.

These two layers cross each other at the side of the patella, the innermost fibers forming with each other an angle of about ninety degrees. The apex of this angle is about three-fourths to one inch from the patella, about opposite its middle. For this short distance the fibers are crossing each other and form a very strong layer. Inside the innermost fibers as far as the internal lateral ligament, the lateral expansion of the quadriceps is much weaker.

To the outer side of the patella the corresponding fibers from the vastus externus and from the side of the patella probably exist but cannot be seen, as they are covered over by and intimately blended with the very strong iliotibial band of the fascia lata, the fibers of which extend from the patella to the external lateral ligaments of the knee. The strength of this band may be inferred from the fact that it receives the insertion of the tensor vagina femoris and a considerable portion of that of the gluteus maximus muscle.

FIG. 1.—Joint perfectly functional seven years after fracture. Treated by adhesive strips. Ligamentous union, half-inch separation. X-ray suggests bony union. (Pfahler.)

The fascia lata is also closely attached to the internal expansion, but it is much weaker than on the outer side.

It is thus seen that the whole front of the knee is covered by a strong fibrous hood, in the substance of which the patella is developed and enclosed. It is evident that while by far the greatest part of the force of quadriceps contraction is exerted

upon the patella and through the ligamentum patellæ upon the tubercle of the tibia, yet a considerable portion will fall on the lateral expansions.

While the lateral and posterior portions of the capsule of the knee are distinct as ligaments, the anterior is not, but is practically made up of the expanded tendon of the quadriceps femoris muscle, augmented on the outer side especially by the fascia lata.

In the metacarpophalangeal and interphalangeal joints of the fingers there are no dorsal ligaments, these places being taken by the expanded extensor communis

FIG. 2.—Joint functional; slight weakness and incompleteness of extension; separation 1½ inches two years after treatment by figure-of-eight bandage. (Pfahler.)

tendons, and in the corresponding joints of the toes a delicate tissue represents the dorsal ligaments, but the real protection and support is provided by the expanded extensor tendons. An analogous condition exists at the knee and on the same side—*i.e.*, the extensor side. In less degree the same holds true of the extensor side of the elbow where the triceps is expanded over that side of the joint.

Underneath the ligamentum patellæ and the lateral expansions, a loose areolar and fatty layer separates them from the synovial membrane. In certain parts this fatty layer is especially marked, as under the upper end of the ligamentum patellæ and lower tips of the patella; a fracture of that end of the bone may, therefore, occur without opening the joint. But at the margins of the patella all the layers blend to be attached to it, and on its under surface the patella is covered with articular cartilage, so that almost all fractures of this bone open the joint and permit the synovial fluid to bathe the fractured edges.

To obtain some idea of the strain which the lateral expansions will tolerate if the patella is broken, the patella in the cadaver was divided transversely about its middle by a saw. A hook made for the purpose was inserted under the fractured edge of the upper fragment. A little force was necessary to pass it between the fragments. The foot was then tied firmly to one end of the table, while by means of a slender but strong rope an ordinary spring scales, used for weights up to three hundred pounds and graded by five-pound marks, was attached to the hook.

Traction was then made as nearly as possible in the line of the quadriceps muscle. Of course, the hook did not transmit the force to the lateral expansions as evenly and advantageously as would the quadriceps in life. The first effect of traction was a stretching of the fibers, permitting a separation of the fragments for about an inch. Then a tearing allowed the separation to increase rapidly to about two inches.

The tests, though few and imperfect, show at least that the lateral expansions close to the patella will stand a strain of from eighty to a hundred pounds.

Strong tendinous fibers from the quadriceps pass over the patella into the ligamentum patellæ below, and are intimately adherent to the surface of the bone. Directly over them passes the fascia lata. When fracture occurs these fibers are irregularly torn, and the frayed edges are driven by atmospheric pressure between the fragments. In a short time they are so adherent to the fractured edges as sometimes to require an actual dissection for their removal. If not removed they may interfere with bony union.

Most fractures of the patella are due to a violent contraction of the quadriceps while the knee is flexed and the patella is resting on the convex femoral condyles. The lower end of the patella is fixed by the ligamentum patellæ while the quadriceps

is pulling at right angles to the anterior surface of the bone.

Although the treatment of fracture of the patella is one of the most thoroughly discussed subjects of recent years, it remains true that in each of several hospitals of the same city a different method may be advocated and practiced as a routine.

The failure to agree upon one method of treatment is due in part to the fact that no single method is applicable to all forms of this injury to the exclusion of others, but is in the main based on a general experience which shows that the ultimate functional results after fracture of the patella are fairly satisfactory under any method of treatment which fixes the leg in extension for one or more weeks (Figs. 1 and 2). When the joint is normal, the worst that can be expected from purely conservative treatment is a weakness and incompleteness of extension incident to elongation of the tendinous expansion of the quadriceps and separation of the patellar fragments, manifested by difficulty in ascending stairs or rising from a sitting posture, and a tendency to fall forward when the toe is caught even by a slight obstruction.

With a bilateral fragment-separation of three inches it is perfectly possible for a patient to walk in a manner so normal that a previous trauma would not be suspected, though there can be noticed in these cases a swing of the thigh, and a downward and backward planting of the foot with each step, which would suggest the nature of the affection.

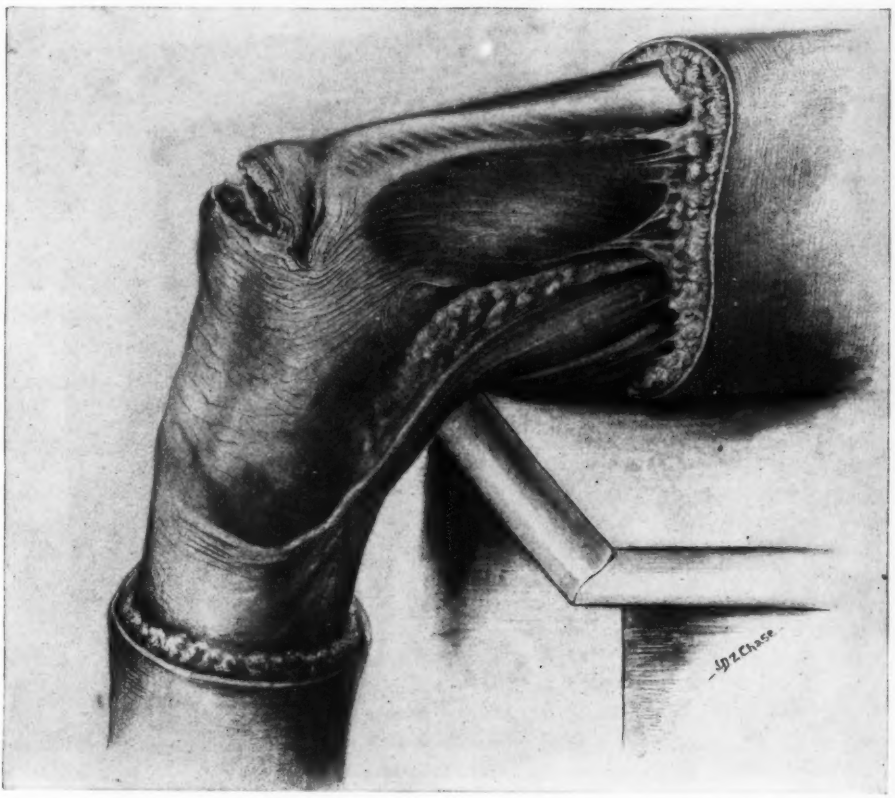

FIG. 3.—Showing the moderate separation (¾ inch) of the patellar fragments when the ligaments and tendinous expansions to either side of the patella are intact.

The usual result of conservative treatment is a separation of fragments so moderate as to cause no serious inconvenience.

In considering treatment of fracture of the patella, the nature and extent of the injury must be regarded, and this is largely dependent on the nature of the trauma. The great majority of fractured patellas are caused by muscular action, the injury then being a tearing apart of not only the

bone, but the ligamentous expansions to either side of it, which represent practically the tendons of insertion of the vasti muscles. This fracture is usually single and simple, and the amount of separation of the fragments will depend on the extent of tearing to which the ligamentous structures lying to either side of the bone have been subjected. When these structures are untorn the separation of the indicative of the extent of this tear (Fig. 4).

When the leg is held extended upon the thigh, even with a very wide tear, the patellar fragments may lie close together, but when the patient tries to lift the thigh from the surface on which it is lying, the upper fragment is pulled away from the lower. The same effect is produced by the surgeon bending the leg on the thigh.

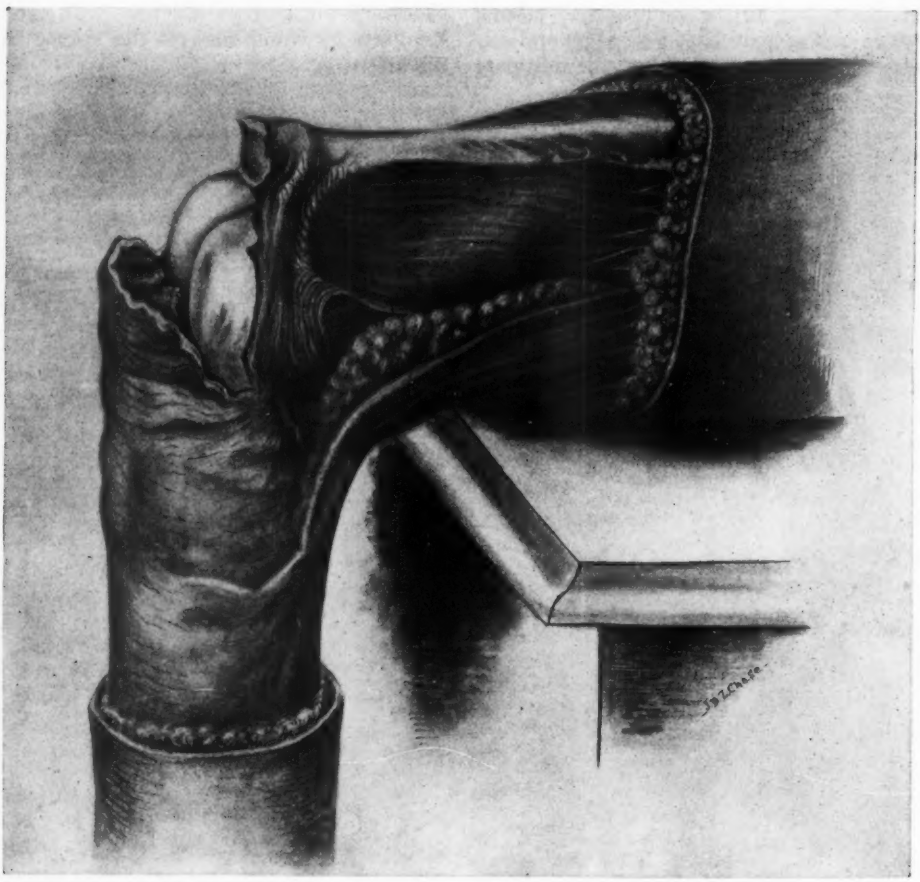

FIG. 4.—Showing the wide separation of the patellar fragments (3 inches) when the ligaments and tendinous expansions to either side of the joints are torn.

fragments when the leg is flexed at right angles to the thigh will not be greater than half an inch. It is usually not more than a quarter of an inch. Fig. 3 illustrates this perfectly.

Fragment-separation of more than half an inch necessarily implies that the tendinous expansions at the sides of the patella have been torn. The amount of separation when the knee is flexed is roughly

Blow fractures are usually comminuted, are often compound, and the tendinous structures to either side of the patella are usually uninvolved; hence the fragments, though often displaced, are not widely separated from each other even when there is a large effusion into the joint.

The treatment of tear fractures has for its object a union of the patella either by bone or by a ligament of not over half an

FIG. 5.—Joint functional; slight weakness of extension; incomplete flexion, twenty-four years after treatment by Malgaigne's hooks. Separation one inch. (Pfahler.)

FIG. 6.—Weak joint (loss of extending power) thirty-one years after treatment by adhesive plaster (separation 6 inches). The patient walks well. (Pfahler.)

inch in length, and should give careful consideration to the immediate restoration of the continuity of the tendons of insertion of the vasti muscles when these are torn, since unless this is close a short ligamentous union of the bone fragments will commonly break or stretch, leaving a weak joint.

The treatment of blow fractures has for its end the bringing into good apposition often many small fragments of bone.

The treatment of fractured patella may be non-operative or operative, but even in the non-operative treatment there is no universally accepted method of procedure. One of two methods is usually adopted. In the first, and perhaps this is the ordinary method in hospitals and private practice, the leg is fixed in extension, the fragments being brought in as close apposition as possible by means of adhesive strips. This fixation is continued for from four to six weeks, and is often accomplished by a plaster-of-Paris bandage. After this period the patient is subjected to massage and passive movement, and should have acquired as much function as he can expect in from six to twelve months. This in patients previously healthy and with a normal joint.

The second conservative method consists in fixing the leg in extension for from six to ten days and applying about the swollen joint pressure by means of elastic bandages. At the end of ten days vigorous massage is to be practiced, together with gentle passive movements. The claim for this method is a greatly shortened period of convalescence, incident to the rapid absorption of the inflammatory exudate and an approximation of fragments sufficiently close to insure good function.

These two methods are often combined in part. Fibrous union results from both methods (Fig. 5), and in both the fragments are likely to become more widely separated with use (Fig. 6), though this usually occurs only in such cases as exhibit at the time of the accident the symptoms of a wide tear of the tendinous expansions of the quadriceps.

The operations practiced for the cure of fracture of the patella are:

1. Subcutaneous anteroposterior encircling of the two fragments by means of silver wire.

2. Subcutaneous peripheral circumferentiation of the patella by a purse-string wire suture.

3. Free incision and direct bony suture of the patellar fragments and suture of the torn ligaments on either side.

Of these methods the subcutaneous encircling of the patella in an anteroposterior direction by a silver wire—the so-called Barker method—is perhaps least desirable.

It opens the joint, but provides an inadequate exit for the blood-clots which it may contain. It introduces a foreign body into the joint and allows it to remain there. It provides no sufficient means for the removal of the shreds of periosteum

FIG. 7.—Joint of normal strength and motility thirteen years after wiring. Apparent bony union. (Pfahler).

which nearly always cover the broken bone surfaces, and which adhere so tightly that in an open operation it is sometimes needful to use forceps and curette to strip them up. It does not close the torn tendons of the vasti.

To its credit stand hundreds of thoroughly successful cases and very few instances of infection. Moreover, the operation is simple and can be completed in five minutes. It requires but few instruments, no technical training, and if practiced under antiseptic irrigation assures against joint infection provided the long curved blunt-ended needle and the silver wire are sterile.

If indicated at all, it would be for those

cases which are most successfully treated by conservative treatment—*i.e.*, simple single blow or tear fractures without wide separation.

The purse-string suture has its main application in blow fractures which are simple, are extensively comminuted, and are unattended by rapid and great joint distention. Such fractures are rare. This method brings into apposition the broken fragments without endangering their vitality, though there is always the possibility that some pieces of bone may be forced into the joint cavity or may unite in such a position as seriously to interfere with function.

The open operation is the one of choice for all fractures of the patella attended by separation of more than one-half inch when the knee is in the flexed position, and for all fractures in which the joint becomes rapidly distended with blood. It should be practiced as soon as possible after the injury. It enables the surgeon to clean the joint cavity thoroughly, to suture the torn tendons of the vasti, and to bring the patellar fragments in exact apposition and to hold them there, thus assuring bony union—in other words, to restore the joint to its original strength (Fig. 7).

The patella is exposed by a horseshoe incision, beginning over the posterior surface of the lower extremity of one femoral condyle and carried across to a similar point on the opposite side of the joint. The concavity is downward. The flap is turned down, the patellar break is at once exposed, the joint is cleansed with normal saline solution until all the clots are evacuated, one mattress silver wire suture is inserted if the fracture is a single one, as many as needful if it be comminuted, the tears in the ligaments at the sides of the patella are closed by wire mattress sutures,

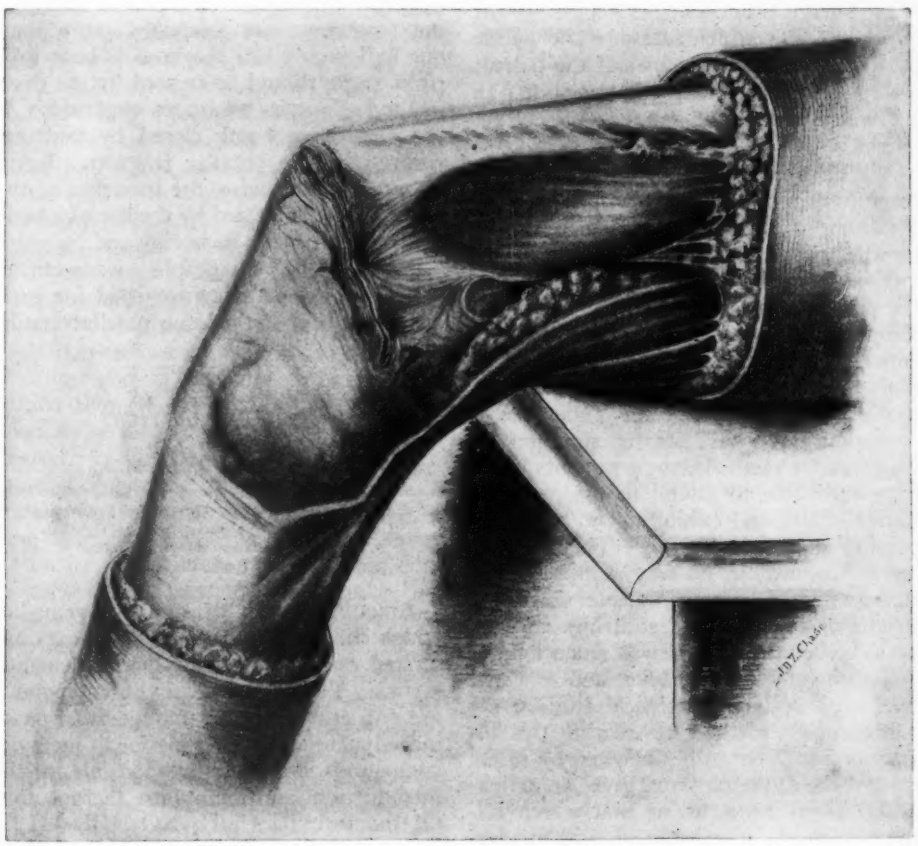

FIG. 8.—Bony and tendinous suture of fractured patella.

and the patellar suture is finally twisted and hammered down (Fig. 8).

This operation can be done very rapidly. The main difficulty lies in passing the wire through the drill holes made in the patella. This is simplified by using a drill with an eye in its end. The patella should be so drilled that the wire does not pass through the cartilage, but gets a thoroughly good grip on the bone. The whole operation can be readily completed in less than fifteen minutes. The wound is closed without drainage. The joint is kept quiet for ten days, after which massage and gentle passive motion are begun and the patient is allowed to walk with a back splint. In six weeks the splint can be entirely removed.

We have treated eleven cases of recent fracture of the patella by the open method, obtaining completely satisfactory results in all; and eight by the subcutaneous method—one by circumferentiation with the purse-string suture, and seven by anteroposterior inclusion. The results were entirely satisfactory in the cases treated by the subcutaneous method, though in two there was a wide separation at the time of operation. We have treated six cases by conservative methods, these patients being afterward able to attend to the ordinary duties of life and exhibiting no weakness barring that of extension. These results were, however, in no way comparable to those obtained by subcutaneous wiring or by the open method of suturing, and the period of convalescence was much longer.

Judging by results alone, and this will hold true of large statistical studies, the subcutaneous method of treating this injury is less likely to be followed by infection of the knee-joint and gives an articulation about as useful as that which follows open operation. On general surgical principles, however, and this would doubtless be carried out by clinical observation were a sufficient number of cases available for the study of the remote results of treatment, the open method is the one of choice.

The choice of treatment of these cases may be summarized as follows:

1. The conservative treatment of fracture of the patella is applicable to blow or tear fractures in which the separation of the fragments is not greater than one-half inch when the knee is flexed to a right angle, and in which there is no great joint tension. Conservative treatment consists in fixation for ten days, the application of adhesive strips to approximate the fragments, the use of elastic bandages to prevent inflammatory exudation, and the employment of massage and passive movements.

2. All fractures of the patella, independent of the amount of fragment separation, attended by marked and immediate joint tension should be treated by the open method.

3. All fractures of the patella in which the fragments are separated more than one-half inch when the knee is bent to a right angle should be treated by the open method; the torn tendinous expansions of the quadriceps being closed by mattress suture, and the patellar fragments being united by silver wire, the insertion of the latter being facilitated by the use of a bone drill with an eye in its boring end.

NOTE.—The skiagraphs were taken from Blockley patients admitted for various causes other than the patellar conditions.

DIONIN—A NEW AGENT IN OPHTHALMIC THERAPEUTICS.[1]

BY WENDELL REBER, M.D.,

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Among the host of synthetic remedies which chemistry in the last few years has offered ophthalmologists, dionin demands a trial. The fact that ethylic compounds are (at least from the standpoint of pharmacodynamic action) superior to methylic compounds is probably responsible for the introduction of dionin into therapeutics. Of the formula $C_{19}H_{23}NO_3HCL+H_2O$, it is known as ethylmorphine hydrochlorate, or "codethyline," as it was called by its discoverer, Grimaux. It is a white crystalline bitter powder, soluble in about 7 parts of water, 1½ of alcohol, or 20 of syrup; but not at all in ether or chloroform.

Dionin was first used by Schroeder (*Therap. d. Gegenwart*, No. 3, 1899) and Korte (*Therap. Monatsh.*, vol. xiii, p. 33), who declared it superior to both

[1] Presented to the Northwest Medical Society of Philadelphia, Sept. 1, 1903.

morphine and codeine in phthisis, chronic bronchitis, and pulmonary emphysema.

To Wolffberg, of Breslau, belongs the honor of employing dionin in the cure of diseases of the eye. It is his researches too (*Wochensch. f. Ther. u. Hyg. des Auges,* vol. iii, No. 16) that give this drug so unique a position among ophthalmic remedies. Darier claims that it not only possesses a profound analgesic power, but that it also has a favorable action upon a morbid process itself, facilitating the dilatation of the pupil (when it is slow under the action of atropine), assisting the resorption of pupilary exudates, and lastly diminishing tension in cases of glaucoma. His discovery of these reputed properties of the drug was purely accidental. He had been treating an obstinate iritis for several days without avail, when it occurred to him to try the effect of dionin. About one-fourth of a grain of the powder was placed in the conjunctival sac, producing at first much smarting, followed soon after by a sense of numbness and marked serous infiltration under the conjunctiva; the eyelids, too, became much swollen. One hour later the pupil was fully dilated and the pain much relieved. Two days later the patient returned, reporting that she had been entirely free from pain during that time, and the eye was almost free of congestion. This experience was shortly repeated in several other cases, and Darier soon after made an enthusiastic report on the use of the drug (*Ophthal. Klinik,* No. 7, 1900). His earnest plea for its employment led investigators in France, Russia, and Germany to experiment with it, and with more or less success when it was properly exhibited.

My own experience with the drug has been confined to the following conditions:

1. Postoperative complications.
2. Iritis.
3. Interstitial keratitis.
4. Vitreous opacities.
5. Glaucoma.
6. Corneal opacities.
7. Sympathetic ophthalmia.

A cataract case that threatened to go wrong furnished me my first experience. The case history is as follows:

Case No. 3211, a married woman of seventy-two, had been under my care for three years with advancing cataract in both eyes. She was in fairly good health, but having been near-sighted and astigmatic all her life, operation did not promise as good results as in the cases that usually present themselves. Albeit, in November, 1892, I did a preliminary iridectomy on the right eye, and as healing was uneventful I proceeded to extraction of the lens four weeks later, which also was successful. Secondary capsular cataract formed almost immediately, however, and six weeks after the extraction of the lens I needled the capsular cataract under the same strict aseptic precautions as had obtained with the two previous operations. Thirty-six hours later there was marked iritis and a plainly seen forming bacterial colony in the anterior portion of the vitreous humor, with impending panophthalmitis. As her pain was terrific and had not been relieved by atropine locally and large doses of sodium salicylate internally, I ordered for her 10-per-cent solution of dionin, to be used every two hours. The next morning I found my patient absolutely free from pain, and although there was great serous infiltration under the conjunctiva and swelling of both eyelids, the cornea was clearer, the iris of better color, and the bacterial colony seemed smaller. The dionin was continued, and within five days the bacterial colony was no longer in evidence, and what surprised me even more, *the capsule of the lens had entirely disappeared*—not a vestige of it was to be seen anywhere. I was led to use the dionin in this case by Darier's results in two cataract cases in which the postoperative débris was said to be much more quickly absorbed under the influence of dionin than naturally.

Subsequently I employed dionin in two cases of discission for congenital cataract to assist in the absorption of the broken-up lens matter, and was greatly pleased with its action in both eyes.

Iritis.—Nowhere is the action of dionin more striking than in this disease. In four cases relief of pain ensued in all within two hours after beginning the use of a five-per-cent solution of the drug, and that when atropine and all the usual remedies had failed to relieve. Darier's (*Lecons de thérapeutique oculaire,* 1902) best results have been secured in this same disease. Indeed, it was in a case of iritis that he happened upon the chief value of

dionin. J. W. Ingalls (*Brooklyn Medical Journal,* 1900, p. 698) has been similarly successful in quickly and lastingly relieving the pain of iritis with dionin, but he prefers solutions even as weak as two-per-cent. Personally I have not been able to get such results with anything under five-per-cent solutions.

Interstitial Keratitis.—Two cases of interstitial keratitis were treated—one the hereditary (parental) form; the other the acquired form (a unilateral case); and in both dionin was not only quite helpful to the atropine, but was quite as markedly active in promoting the absorption of the newly formed matter in the stroma of the cornea.

I am indebted to Dr. H. F. Hansell for the following notes of a case of sclerosing keratitis, in which dionin was employed:

"B. A., a maiden lady of thirty-four, applied for treatment for an old sclerosing keratitis, May 8, 1903. The right eye had been afflicted for ten years, the left one for five years intermittently. The vision at this time was R. 1/60, L. 5/12. In the right eye the corneal stroma was diffusely opaque throughout, and the sclera violet-colored and ectatic. There was deep ciliary injection, annular posterior synechia (but no iris bombe), and a very deep anterior chamber. The temporal corneo-scleral region was not only deeply injected, but was beginning to bulge. In the left eye the sclerosis of the cornea was advancing from the temporal side well over into the visual zone of the cornea. There was one large posterior synechia, but the pupil reacted promptly to light. Iridectomy was done on the right eye and pilocarpine sweats given daily for five days with some slight improvement in vision. At this time two drops of a 12-per-cent solution of dionin was instilled in both eyes, and a violent reaction promptly ensued, the eyelids and indeed the whole face swelling up as in facial erysipelas. Twenty-four hours of ice applications controlled the reaction. Later dionin was reapplied in the same strength solution every second day, with only moderate reaction. After eight days the dionin was used daily for five or six days. June 1 (after two weeks' treatment with dionin) the vision was R. with +4.50 sph. =5/20; L. with +2.50Cx60° 5/5 ptly. The young woman at this time returned to her home in Massachusetts, and no accurate information as to the subsequent course of the disease has been received."

This result rather negatives Konigstein's (*l. c.*) contention that dionin is of no value in the late stages of interstitial keratitis. Bordeaux (*Klin. ther. Wochensch.,* vol. ix, No. 29) and Batalow (*Vratch,* No. 19, 1901) have both used the drug in interstitial keratitis (the latter in a great number of cases), and both testify to the more rapid healing and clearing of the cornea under its influence. Konigstein (*Wien. Med. Presse,* 1903, Nos. 10 and 11) believes that dionin is almost completely abortive of parenchymatous keratitis if used in the earliest stages of the disease, but considers the drug absolutely valueless in its later stages.

Vitreous Opacities.—In two cases of hyalitis of the conventional senile type dionin was wholly without effect.

Corneal Opacities.—But one case of corneal opacity was subjected to the action of dionin. This was in a five-year-old child, both of whose corneæ were cloudy throughout their whole extent as a result of ophthalmia neonatorum. No result whatever was obtained in this case. On the other hand F. von Arlt (*Heilkunde,* vol. vi, No. 11) tried dionin in twenty cases of corneal opacity and claims to have gotten results far better and quicker than ensue from the generally accepted treatment. A. Graefe (*Deutsche med. Wochensch.,* vol. xxvii, No. 15) has also found dionin of use in clearing up corneal opacities. Darier (*l. c.*) remarks that seemingly good results follow stimulation of the nutrition of the cornea and regeneration of its epithelium, but goes on to say that *we cannot speak of dionin's action on the cornea as strictly curative.*

Glaucoma.—Recently there came to me a 69-year-old woman whose right eye had been in a state of absolute glaucoma for four years. During this time it was only by daily massage, the use of eserine and sodium salicylate that the eye was kept free of pain. In June of this year she developed on that eye a corneal ulcer that behaved very much like a pneumococcus ulcer. None of the usual anesthetics gave her any relief from her pain, and the eyeball became very much injected and stony hard. Atropine—one of our valued agents in the treatment of most corneal

ulcers—was manifestly impossible because of the glaucoma. Dionin was therefore combined in 10-per-cent solution with her previous eserine collyrium, and in twenty-four hours she was practically free of pain, and the tension had fallen from stony hardness to about +2. This relief persisted for six days, when the cornea ruptured at the site of the ulcer.

No opportunity has thus far afforded of trying the drug in pure uncomplicated inflammatory glaucoma. In several cases of acute glaucoma, Bellarminov (*Vratch*, 1901, No. 9) has seen the excruciating pain disappear after the use of 10-per-cent dionin ointment, when pilocarpine and eserine had been unavailing.

If dionin proves to be the efficient vasodilator and lymphagogue that it has seemed to be in the few glaucomatous cases in which it has been tried, it ought to become the ideal agent in the hands of the general practitioner in those cases in which he finds it difficult to determine whether he is dealing with a glaucoma or with an iritis. Heretofore he has had to choose between atropine and eserine in such cases, and on his choice of drugs has probably turned the recovery or irreparable damage of an eye. In such a situation he would now seem to be justified in resorting to the use of dionin with the consoling reflection that no matter which of these two diseases he is combating, the dionin will prove helpful until such time as he can refer the patient to an ophthalmologist. This is a consummation devoutly to be wished.

Sympathetic Ophthalmia.—In one case of sympathetic ophthalmia, dionin was of marked service in promoting the absorption of plastic exudate in the pupilary space after the offending eye had been removed and the remaining eye was very slow in regaining any vision at all.

Mode of Action.—It is to be distinctly understood that dionin is not an anesthetic, for while it suppresses pain it does not in any way affect sensibility. It is an analgesic. This is a marked advance in ocular therapeutics. But dionin is also something more—it is a lymphagogue. It produces redness and very marked vascular dilatation with abundant lacrimal secretion. The lymphatic channels then become so distended and dilated as to attain in some instances ten times their original dimensions (Vermes, *Wochensch. f. Ther. u. Hyg. des Auges.*, Feb. 7, 1901: Histologic Examinations of Sections of the Conjunctiva). The conjunctiva frequently becomes enormously swollen, and the eyelids themselves sometimes partake in this swelling; indeed, the eye occasionally assumes an alarming aspect, but no danger need be apprehended. Darier (*l. c.*) aptly asks, "Does dionin act hygroscopically, manifesting its resolutive action by a subtraction of pathologic fluid, which is then replaced by purer blood?" Others have asked whether dionin does not act by counter-irritation just as does a blister; and still others have asked whether it is not in the same category with jequirity in the way it induces increased lymphatosis. Until we have more facts at our command, it is justifiable to assume that dionin acts by stimulating the lymphatic and vascular circulation of the eye. No drug thus far offered in ophthalmic therapy has shown so interesting and effective a combination of properties.

Methods of Use.—Dionin may be exhibited in four forms: as a powder; in solution; as an ointment; or in the shape of cocoa-butter rods. Solutions are preferred by Ingalls, Marquez, and Nimi; Wolffberg gives the preference to the rods, representing 10 to 20 per cent of the drug. All authorities seem to agree upon ointments as the best way to treat corneal opacities. Darier shows a strong leaning toward the pure powder, of which he puts one-twelfth of a grain in the eye. (In two of my patients one-half grain has been put in the conjunctival sac without a particle of effect.) When he uses a solution it is generally of five-per-cent strength. Graefe also uses both the powder and the solution. In cases where the application has to be left to the patient or nurse, von Arlt prescribes a 10-per-cent ointment, of which a bit the size of a pea is introduced into the eye, which is then well massaged. It will probably be found that the caprice of the operator and the exigencies of individual cases will have much to do with the form in which the drug is used. In my own experience I have used only five- and ten-per-cent solutions. A point always to be borne in mind is that the eye develops tolerance for the drug very rapidly, so that little or no effect will be secured from its use longer than six or seven days.

To summarize what has gone before, it may be said:

1. That dionin possesses properties at present inherent in no drug thus far used in ocular therapeutics.

2. That it is an analgesic of no little power, and is frequently of value in alleviating the pain of iritis in those cases in which atropine does not relieve.

3. That the action of atropine seems to be enhanced by dionin.

4. That it has, upon the eye, a powerful vasodilator and lymphagogue action.

5. That it is of value, if used to the point of distinct reaction, in promoting the absorption of exudation deposits upon the anterior capsule in the pupilary space, and also in helping the absorption of post-operative débris after cataract.

6. That it certainly does help to clear up the corneal opacities in some cases of interstitial keratitis.

7. That it seems without effect in all other forms of corneal opacities.

8. That its influence on the glaucoma process is yet unsettled.

9. That it should be widely used and the effects of such use reported, in order that a final correct estimate of the value of the drug may be made.

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THE TREATMENT OF ASTEREOGNOSIS BY RE-EDUCATION.

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Astereognosis, which may be defined as the inability to recognize objects, their nature and uses, by touch, on account of cerebral disease, but not because of any affection of the peripheral nerves or spinal cord, most frequently occurs in association with incurable hemiplegia, or as a symptom of tumor of the brain. In neither case is treatment worth while, because in the former the total palsy of the arm makes it a useless organ, and in the latter all symptoms will increase with the progress of the disease. When it is the result of a total and complete hemianesthesia from organic disease, treatment is of no avail. In hysterical cases the proper treatment is, of course, that of the underlying hysteria; and the prognosis as a rule is good. Sometimes, however, it occurs as a residual symptom after cerebral thrombosis, or a fracture of the skull in the parietal region, the palsy entirely or largely passing away, and the partial anesthesia which causes the inability to recognize objects by touch remaining as the most troublesome symptom. In these cases treatment may greatly improve or indeed entirely remove the inability.

The method is educational, based upon the idea Frenkel utilized in the treatment of ataxia. It is assumed that sensory cortical cells may be diseased in such a way as to have lost the impress of previous sensory stimuli, yet be normal enough to take and preserve new impressions, and that neighboring cells may vicariously take on the function of those destroyed. The theory of the vicarious action of nerve cells in certain symmetrically placed portions of the brain is accepted by every one in explanation of improvement or recovery in some cases of aphasia, the assumption being that there is a latent power to take on speech function in the right hemisphere. The hypothesis that not only symmetrically placed but also neighboring, immediately adjoining cells, may take on the functions of those destroyed or diseased is, however, not completely in accord with the prevalent neurone theory. Yet there are things to be said in its favor, and it explains many recoveries from disease in which the neurones ordinarily performing certain functions are destroyed. It is not very infrequent, for example, to find at necropsy in cases of Pott's disease in which palsy of the legs had entirely passed off the motor tracts of the cord much smaller and containing fewer fibers than normal. This would seem to indicate that there is an overplus of motor fibers in the cord. Again, the cerebral centers do not have clear-cut, absolutely defined boundaries; rather they fade into each other. The central parts are definite, the peripheries indefinite. In every other organ of the body except the nervous system there are undoubtedly more cells than are required for the work to be done, and it would be rather remarkable and greatly increase the instability of the brain if it had no reserve cells to call upon when needed. The purpose here, however, is not to discuss cere-

bral physiology, but to relate a method of treatment which, whatever theory in explanation of it may prove to be correct, is of some value in relieving a very serious disability.

The method is very simple and consists in having the patient reëducate his sensibility to external stimuli by having him repeatedly handle and feel objects of different weight, shape, and texture. No elaborate apparatus is needed. Blocks of different shapes and sizes, pill boxes of equal size and shape, but containing different weights of shot; pieces of silk, cotton, and flannel, rough and smooth paper, coarse and fine sandpaper, and later, any common objects, are all that is required.

It is best at first to have the patient try only to determine sizes, weights, shapes, and textures, and not what the objects are. The early lessons should last only a few minutes because the patients soon tire, which is a signal to stop. Several patients have told me that they felt not only mental tire but distinct muscular weakness in the arm, though the muscular effort made in handling small objects is infinitesimal. One gentleman, by no means hysterical, said that always during the first few weeks of his treatment, as soon as he began to tire he also had a very unpleasant feeling at the seat of an old fracture in the parietal region.

The method can be successful only in intelligent patients. Those who cannot concentrate attention cannot be helped. The treatment can be carried out well by the patient himself, the only precaution being that he must not see the objects, but depend on the sense of touch alone.

The treatment should be persisted in for many weeks or even several months. Rapidity of improvement varies greatly. If there is no improvement after daily quarter-hour lessons for a month it is useless to continue. Sometimes the patient will recognize objects fairly well for, say, five minutes, and then begin to fail. He must then stop till next day.

Finally, it is not to be supposed that every case of astereognosis due to fracture or thrombosis can be cured or even benefited. I mean only that it is worth trying in many cases and will succeed in some. It cannot be foretold in which cases success will come, in which failure.

THE GRADUAL RESTRICTION METHOD OF CURE IN MORPHINE, COCAINE, AND OTHER DRUG ADDICTIONS.

By S. Ormond Goldan, M.D., New York,
Member American Medical Association; Fellow New York Academy of Medicine, etc.

The treatment of drug addictions, particularly morphine and cocaine, may be by immediate restriction or gradual restriction, which may be more or less rapid, depending upon the peculiarities of the case. We can say positively that drug habits can be cured. The first case I treated in which morphine was taken was published in my first paper.[1]

The second case was a male patient who was addicted to the use of cocaine in powder as a snuff. His addiction to the drug began by his using it for a cold in the head, he having secured the number of the prescription from another user, who had also secured it from some one previously. I found the original of the prescription had been written eight years before by a New York physician of note, long since dead. The pharmacist was accustomed to prepare this in advance and supplied it in small vials. It is only necessary to conjecture how often this prescription had been refilled and the numbers of persons who had used it. A communication from me to the druggist resulted in his refusal to supply the drug, and as a consequence the patient discontinued its use, not however without making every effort to secure it. One may question whether he was actually cured, but the entire change in his habits and in the treatment of his family, the fact that his wife, who is an intelligent woman, failed to find the drug secreted anywhere, although formerly she never failed to do so, and more than this, the general appearance and actions of the patient, may be taken as quite certain evidence that the drug had been discontinued.

The immediate restriction by the use of hyoscine hydrobromide is no doubt the most satisfactory method of treating this condition, but it cannot be used in all cases. First, it is expensive and requires

[1] "Morphine Habituation and its Treatment by Hyoscine Hydrobromide," read before the medical section of the New York Academy of Medicine, Nov. 18, 1902, and published in the *New York Medical Journal*, Jan. 31, 1903.

time, which all patients cannot give, and as drug addictions occur in all walks of life, the gradual elimination plan can be tried in all cases. Though a longer time is required to effect a cure, the results are equally satisfactory provided we have the coöperation of the patients—that is, an actual desire to be cured of their craving for these drugs.

The desire for cure by those addicted to the use of narcotic drugs makes them an easy prey to the wiles of the charlatans, who advertise in the lay journals their so-called cure, consisting of placing the drug to which the patient is addicted in a harmless mixture. The patient is deluded into the belief that he is being cured, while he is still taking the drug, and only realizes the duplicity practiced upon him after some months, when his condition is even worse than it has been. A pharmacist who had been taking two drachms of morphine weekly for some years, and who applied to me for treatment, informed me that he had found the same amount of morphine in the mixture he had taken for nine months. It can easily be seen why these so-called "cure" concerns ask would-be applicants to declare upon their honor that the answers given to the apparently *bona-fide* questions asked are correct in reference to the quantity and preparation of the drugs used and frequency of administration.

The gradual restriction plan of treatment consists simply in an attention to details. The treatment is varied as progress is made, and in order to apply the method intelligently a thorough knowledge of the habits of the patient is necessary. There are three principal conditions to be considered, each of which is a result of the one preceding, and we may say we have a specific remedy for each.

1. The gradual elimination of the drug by replacing it with others, until both are entirely discontinued.

2. The treatment of toxemia by remedies which have peculiar properties as eliminatives of toxic, effete elements; also the use of stimulants of the emunctories, and the employment of gastric lavage.

3. The treatment of the neurasthenia, which is a condition which exists to a greater or less extent in all habitual drug takers.

Hyoscine hydrobromide I believe is a true specific in drug addictions. It should be administered in small doses, as the other drug is withdrawn as rapidly as circumstances will permit, giving a slightly larger quantity at night. Hyoscine is analgesic and hypnotic, and only slightly narcotic. It replaces morphine and cocaine with little if any of the deleterious properties of these drugs. As it is an extremely powerful drug it is rarely necessary to give more than 1/100 of a grain, though the beginning doses should be smaller. Hyoscine has been denounced as too powerful a drug to use, but all patients are not alike, and if a practitioner cannot use hyoscine intelligently then he is unfit to use any other drug.

We also apply remedies to stimulate the intestinal and renal functions, giving in addition much water to flush the kidneys. Gastric lavage is employed for the first week or so, for it is well known that morphine in particular is eliminated by the gastric mucous membrane, and reabsorbed unless preventive measures are resorted to.

Many remedies may be employed for the relief of neurasthenia, of which the chief are tonics, depending upon the individual preference of the practitioner. A valuable remedy for this condition is the glycerophosphates, administered preferably hypodermically, or if desired by the mouth. Glycerophosphates are particularly useful also for the general weakness and muscular pains which these patients complain of when undergoing treatment. For this last condition the various coal-tar preparations or any other non-narcotic drug may also be exhibited.

CHOLELITHIASIS, WITH A REPORT OF TWO CASES.

By John B. Shober, A.M., M.D., Philadelphia,
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Until within a very few years the diagnosis of gall-stones was seldom made unless the case presented such well marked symptoms as to be unmistakable. A palpable gall-bladder or tumefaction, right hypochondriac pain constantly recurring, the presence of more or less jaundice, and the passage of stone per intestine, were

believed to be the characteristic symptoms, in the absence of which a positive diagnosis was said to be impossible.

The chief difficulty which the diagnostician encountered in the past was the very incomplete knowledge we possessed concerning the etiology of the disease, and this rendered many cases obscure which we are now able to diagnose with some degree of certainty.

It has recently been stated by Reidle that ten per cent of the adult population of Germany are the subjects of gall-stones, and Kehr believes that only five per cent of these present characteristic symptoms. However, among the ninety-five per cent of unrecognized or obscure cases there must be a large number of patients who suffer with recurring attacks of hepatic colic more or less severe, and who drift from one physician to another seeking relief for obscure symptoms which are attributed to various functional disorders, such as gastric and intestinal indigestion, so-called torpid liver, chronic Bright's disease, etc. It is to this large class that the attention of the medical world has been directed of late years, and physicians and surgeons have another "bone of contention" quite analogous to appendicitis, over which happily at this time an amicable discussion is going on rather than one in the spirit of contention which characterized discussion of the latter subject a decade or more ago.

The light which bacteriology has thrown upon the subject is undoubtedly the beacon which has guided the profession to a more or less clear understanding of the etiology of cholecystitis and calculus formation. This increase of knowledge has led not only to earlier diagnosis in many of the formerly obscure cases, but also to improved methods of medical and surgical treatment.

I desire to point out a few of the important facts which the bacteriologist has taught us, and then briefly to report two instructive cases of cholelithiasis which have recently come under my care.

It is now generally admitted that bacterial invasion of the gall-bladder is the most important factor in the causation of gall-stones. As early as 1886 the theory of the microbic origin was advanced, but Gilbert was one of the first to absolutely prove the fact.

Gilbert and Fournier (*Compt. Rend. de Soc. de Biol.*, p. 936, 1897) produced gall-stones experimentally by inoculation with colon bacillus and also with typhoid bacillus.

H. W. Cushing (*Johns Hopkins Hosp. Bull.*, May, 1898, p. 91) quotes Flexner as having found pure cultures of typhoid bacilli in the bile in 50 per cent of cases dead of this disease.

Cushing found that ten out of thirty-one cases of cholelithiasis in Halstead's clinic gave a definite history of enteric fever. He also gives five post-typhoidal cases in which the bacillus coli communis was isolated.

J. B. Deaver (*Phila. Med. Jour.*, Dec. 13, 1902) says that the mere fact of bacilli in the bile is not sufficient to cause lithiasis, but that biliary stasis or the congestion of the mucous membrane of the gall-ducts and the presence of bacilli strongly predispose to stone.

Chiari, quoted by Deaver, found typhoid bacilli in the gall-bladder in nineteen out of twenty-one cases of typhoid fever coming to autopsy.

W. H. Welch (*Med. News*, vol. lix, p. 669) claims that typhoid bacilli may be found in the bile of animals five days after an intravenous injection of this micro-organism. He has also demonstrated the presence of colon bacilli in gall-stones.

Muller, of Philadelphia (unpublished), has examined the gall-stones from twelve cases which came to operation for this condition; in three cases he found bacilli coli communis, in one case the typhoid bacilli, in eight cases no growth.

A. J. Lartigan (*Journ. Am. Med. Assn.*, April 12, 1902, p. 930) claims that under normal conditions the intestinal bacteria are found for only a short way up the common bile-duct. But in case of disease of the gall-bladder or change in the composition of bile, bacilli frequently enter the gall-bladder. He found the colon bacilli present in 25 per cent of the gall-stones examined by him. He believes that the colon bacillus is the most important bacterial factor in the incitement of gall-stones.

The invasion of the gall-bladder by bacteria takes place either directly through the common duct from the duodenum, which is the normal habitat of many forms of bacteria, notably of the colon bacillus,

or else, as in the case of typhoid infection, *indirectly* by the circulation through the liver and gall-ducts.

Another important fact which seems to be established by recent studies is that gall-stones tend to form primarily in the gall-bladder and not in the ducts. It is, however, well known that calculus formation takes place in the common and hepatic ducts under certain conditions: for example, when there exists obstruction of the common duct by calculus or otherwise, concentrated bile, and extension of a previous bacterial infection of the gall-bladder to the smaller ducts (cholangitis). Under these circumstances we find the same conditions favorable to the formation of stones as is the case ordinarily in the gall-bladder, namely, concentrated bile and bacterial infection of the walls of the ducts. Ordinarily, however, stones which are found in the cystic or common duct have been formed primarily in the gall-bladder.

The explanation for the above is not difficult. It has been estimated that a normal adult secretes about three pints of bile daily. The gall-bladder acts not only as a reservoir for the excess of bile flowing at any one time, thus temporarily relieving the liver from backward pressure, but also, being contractile, it acts as a pump to keep an even flow of bile through the common duct. The bile therefore which is in the gall-bladder is somewhat more concentrated than that which flows onward through the common duct. It is also stationary for longer periods of time, and therefore more liable to deposit its salts upon provocation. When we consider the enormous and constant flow of bile through the common duct, we are in a position to understand why infection of its walls by extension from the duodenum or indirectly through the circulation is difficult. It is different with the gall-bladder; here the drainage is not so perfect. The specific bacteria, whatever it may be, having entered this viscus either directly or indirectly, finds a quiet harbor, where it may peacefully rest, anchored by a stone of its own formation; or else it may also invade the walls and start a cholecystitis with all its complications.

The acid production of the organisms induces further concentration of the bile, with calculus formation by precipitation of cholesterine, bile acids, and bilirubin-calcium; also infection of the walls of the gall-bladder may and often does take place, and induces a catarrhal cholecystitis with its many complications and sequelæ, namely, pericholecystitis, empyema, hydrops of the gall-bladder, cholangitis, adhesions of the gall-bladder to surrounding organs or to the parietes, with occasional formation of abscess and fistulæ, rupture into the hollow viscera with or without expulsion of stone, extension of infection to other organs, especially to the pancreas, etc. All these conditions give rise to a great variety of symptoms, sometimes most obscure and difficult to interpret. The classical or typical symptoms of calculus and gall-bladder disease are not necessarily present. The pain, if present, may not be localized in the right hypochondrium, there may be no tumefaction or palpable gall-bladder except in the case of hydrops, and jaundice may be absent.

It is very important to remember that the mere presence of stone or stones in the gall-bladder gives rise to no symptoms whatever. If, however, a stone becomes impacted in the cystic duct, hydrops results. If the stone acts as a ball valve at the mouth of the duct, recurrent attacks of hepatic colic occur. Severe attacks of colic occur also during the passage of a stone through the cystic and common ducts into the intestine. Jaundice results to a greater or less degree when the common duct is partially or wholly obstructed by the presence in it of a stone, or by kinking or twisting of the duct from adhesions or pressure from without, or from narrowing of its lumen by inflammatory congestion. Recurrent attacks of cholecystitis and calculus-cholecystitis occur as a result of reinfection, or more frequently they are exacerbations of chronic conditions by the setting free of the latent original organisms.

What then is the significance of cholelithiasis? It simply means that there has been an invasion of the gall-bladder by microörganisms; that this invasion has expended itself in calculus formation and infection of the walls of the gall-bladder, with resulting cholecystitis; that if the infection has been of mild type and subsides without complications, the mere presence of stones in the gall-bladder is of minor importance—they are not likely to

give trouble unless they obstruct the cystic duct and interfere with its proper drainage, or after passing the cystic duct they interfere with the passage of bile through the common duct. The resulting symptoms under these circumstances are significant and unmistakable, and the complications are often disastrous unless prompt and intelligent medical or surgical methods are employed.

It will be gathered from what has been said that cholelithiasis may be considered only a symptom of cholecystitis, a symptom however not necessarily always present. The complications of cholelithiasis *per se* are chiefly mechanical and dependent upon the degree of obstruction to the bile-ducts, while the complications of cholecystitis depend upon the character and degree of the infection and the extent of the inflammatory processes resulting therefrom. The two conditions as a rule exist side by side—that is, stone either in the gall-bladder or in the ducts is present in the majority of cases of cholecystitis, and in most cases of cholelithiasis we find inflammatory changes and the complications of cholecystitis, the result of bacterial invasion of the gall-bladder and ducts.

A discussion of the pathology, the symptomatology, the diagnosis, and treatment of the numerous complications and phases of gall-bladder disease is far beyond the scope of this article, the object of which is merely to introduce the subject in a general way in order to invite discussion.

The following cases present points of marked contrast and are interesting chiefly on that account, and may be summarized as follows:

1. Typhoid infection, cholecystitis, obstruction of cystic duct by stone, enormous hydrops of the gall-bladder, pericholecystitis, cholangitis, multiple abscess of the liver, pyemia, death.

2. Typhoid infection, cholecystitis, obstruction of cystic duct by stone, pericholecystitis with adhesion of gall-bladder to the parietes at the umbilicus, umbilical fistula. Cholecystotomy; recovery.

Case I.—Mrs. H., aged fifty-five; large woman, weighing about 180 pounds. Multipara, youngest child seventeen years old. Family history good. History of typhoid fever ten years before, and malaria for many years; vague gastric and intestinal symptoms for three or four years. She had been confined to her bed for six weeks, very ill with recurring attacks of chills and high temperature. The attending physician, having discovered a large abdominal tumor, asked me to see the patient in consultation. The tumor occupied the right side of the abdomen and extended from the right hypochondrium to the right iliac region. It was movable and cystic. The pulse was small and rapid, the temperature 103° F., the skin moist, and the patient evidently septic. There was no evidence of peritonitis. As she lived in a small town in southern New Jersey, I considered her too ill to attempt the journey to Philadelphia at that time. A week later she was brought to the city on a litter and admitted to the Gynecian Hospital. After admission she had five chills in rapid succession, and died the following day.

The autopsy revealed the following conditions: An enormous, non-adherent gall-bladder, with thick walls, extending into the right iliac fossa, containing about eight ounces of a translucent, brownish, mucoid fluid. Two stones the size of marbles were found free in the bladder, and a third was impacted in the cystic duct. This patient gave no history of jaundice. The gall-ducts were free. General adhesions of the structures around the duodenum, involving the omentum, hepatic flexure of colon, the pancreas, and stomach, were noted. The liver was very large and irregular in outline, and contained three large abscesses and numerous smaller abscesses throughout its substance.

We can only speculate as to the course of events in such a case as this. It seems reasonable to assume that the process began many years before, possibly shortly after her attack of typhoid fever, that in the course of time the cystic duct became obstructed, which resulted in distention of the gall-bladder, that recurrent attacks of infection resulted in pericholecystitis of the base of the gall-bladder, with adhesions to surrounding structures; then followed extension of the infection to the ducts (cholangitis), and further extension by the smaller bile passages to the liver, resulting in the formation of abscesses, which caused death by pyemia.

CASE II.—This patient came from the same town in New Jersey as the previous one. She was forty-two years of age; multipara, last labor eleven years ago. She was referred to me on account of an umbilical fistula which had been discharging a clear, watery mucus for five months. Upon admission to the Howard Hospital May 29, 1903, the following history was obtained: She had always enjoyed good health until two years ago, when she had an attack of typhoid fever (November, 1901). This was followed by what was said to be a relapse, which kept her in bed until March, 1902. During the relapse she became deeply jaundiced and suffered sharp attacks of pain in the region of the right hypochondrium. The jaundice gradually passed off, but she was in very poor health during the spring and summer. In the fall of 1902 she noticed for the first time a decided tumefaction in the right hypochondrium, with increase of pain. She said that she could clearly outline three distinct lumps in this region extending to the umbilicus. In December there occurred a protrusion of the umbilicus, with pain and redness. In January, 1903, the supposed abscess ruptured and discharged a glairy, mucoid material, of a light brownish tinge. After a day or two the discharge became very scanty and lighter in color, almost transparent, and the fistula has continued to discharge ever since.

Upon examination the umbilicus was well retracted, and in its base a small granulation was found indicating the orifice of a fistula which scarcely admitted the point of a small probe. From this opening there was discharging, at the rate of about a minim a minute, a clear mucus, which contained neither cholesterine nor bile. It was not examined for bacteria. There was slight icterus of the conjunctivæ and skin, and the patient complained of right hypochondriac tenderness, which amounted to pain on percussion and palpation. There was decided resistance of the tissues between the right costal border and the umbilicus, with impaired resonance on percussion. The upper border of liver dulness began at the seventh interspace and merged into the area of tenderness and impaired resonance. On account of the resistance, the lower border of the liver could not be palpated. Heart and lungs were normal, and the urine was negative.

The above facts seemed to justify the following diagnosis, which subsequently was proved to be correct: Calculous cholecystitis, the result of typhoid infection, obstruction of cystic duct by stone, hydrops of the gall-bladder with adhesions to the parietes at the umbilicus, the formation of umbilical fistula with subsequent contraction of the gall-bladder and downward displacement of the liver.

Operation June 3, 1903. A linear incision through the belly of right rectus muscle, beginning at the costal border exposed the upper surface of the liver, which was drawn down as far as the umbilicus, where the fundus of the gall-bladder, which projected only slightly beyond the border of the liver, was densely adherent over a surface the size of a silver dollar. Upon freeing this adhesion the liver at once assumed its normal position. The fundus of the small and contracted gall-bladder was opened; its walls were slightly thickened, and it contained two stones the size of hazelnuts. One of these stones was impacted in a dilated cystic duct. There was less than a drachm of fluid. There were a few friable adhesions between the gall-bladder, the under surface of the liver, the omentum, and a coil of small intestine. The gall-bladder seemed comparatively sound, and as no active inflammatory process was present a cholecystotomy was determined upon. After removing the stones a large rubber drainage-tube was made to engage in the cystic duct, and it was anchored to the edge of the gall-bladder incision by one catgut suture. Three catgut sutures were also used to stitch the bladder incision to the parietal wound, care being used to include only the peritoneum and a few fibers of the rectus muscle. A small gauze drain was placed between the under surface of the gall-bladder and the intestines, and the wound was closed as completely as the tube and gauze drain would allow. The patient was placed in bed, and the long rubber tube was led over the side into a bottle which was placed upon the floor.

She made an uneventful recovery, draining for four days an average of 7½ ounces of bile a day. Upon her return to her home at the end of six weeks her physician wrote me as follows: "In regard to the progress of Mrs. B., I would

say that her recovery has been uneventful. She has no pain, the incision is perfectly healed, and she complains only of tiring easily, which condition, I think, is only a natural sequence of what she has been through."

This patient had typhoid fever November, 1901. The gall-stones were removed June 3, 1903. A pure culture of typhoid bacillus was obtained from the center of one of the stones by Dr. C. C. Norris October 20, 1903, two years after infection and four and one-half months after the removal of the stones.

In comparing these two cases we find several interesting points of similarity and contrast. Both were probably due to typhoid infection. Both were cases of calculous cholecystitis with obstruction of the cystic duct by stone, and distention of the gall-bladder (hydrops).

Although in the second case, at the time of the operation, the gall-bladder was found contracted, we are forced to the conclusion that at some previous time, probably just before the occurrence of the umbilical fistula, it must have been greatly distended in order to permit adhesions to form between it and the parietes at this point. The patient stated that while the fistula was discharging the lumps in the right hypochondrium disappeared.

The first case went on steadily to a fatal termination. In the second case nature attempted to effect a cure by the formation of dense parietal adhesions and the establishment of an external fistula at the umbilicus. The fistula acted as a drain and allowed the gall-bladder to contract, resulting however in downward displacement of the liver and leaving the patient in a condition of chronic invalidism, but undoubtedly saving her from the more serious complications of extension of the infection and the increase of the hydrops.

1731 Pine St., Philadelphia.

THE MEDICAL TREATMENT OF ACUTE APPENDICITIS.

G. Lyon states in *La Presse Médicale* of October 28, 1903, that the majority of cases of acute appendicitis, if seen at the beginning of the attack, are amenable to medical treatment. He keeps the patient perfectly quiet, applies ice to the appendicular region, and withholds all food and drink for forty-eight hours. During this time neither purgatives nor enemata are administered, for the author believes that the intestinal contractions which they excite may rupture the appendix and cause its contents to be expelled into the peritoneal cavity, or else prevent the formation of adhesions which localize the peritonitis. On the third day small quantities of water are allowed, and on the fourth milk is given, provided the temperature has fallen. If the temperature does not fall, nothing but water is given for several days. On the third or fourth day an enema of olive oil may be given for the purpose of unloading the bowels, and two or three days later a dose of castor oil, of which two or three teaspoonfuls is generally sufficient. This treatment is applicable only to first attacks which are seen within a few hours after the onset of symptoms, and in which no medication has been used. As most patients who have one attack suffer from recurrences Lyon advocates operation after the subsidence of the first attack. He usually waits from four to six weeks from the time of the initial symptoms, during which period the patient is kept in bed.

INTERSTITIAL NEPHRITIS AND PYELONEPHRITIS TREATED BY PERMANENT CATHETERIZATION.

Cabot (*Boston Medical and Surgical Journal,* Nov. 19, 1903) believes that when efficient drainage is afforded to patients offering the clinical picture of a pyelonephritis complicated by a preëxisting interstitial nephritis a great amelioration or even total disappearance of febrile and uremic symptoms is generally brought about. There is a considerable increase in the amount of urine, and also an increase in the amount of solids eliminated.

The author believes that immediate continuous catheter drainage of an overdistended bladder is often better than intermittent catheterization. By thus establishing a constant outflow, all danger of back flow up the ureter is removed, and thus are greatly diminished the chances of pyelonephritis.

It also seems probable that in cases of dilated ureters, permitting regurgitation of the urine from the bladder back to the pelvis of the kidney, prolonged drainage of the bladder will permit such a shrinkage of the ureters and ureteral orifices as to result in normal valvular action of the ureters and the prevention of retroflow.

The Therapeutic Gazette

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Leading Articles.

BOLDNESS AND CONSERVATISM IN THE TREATMENT OF CARDIAC DISEASE.

In connection with this subject we have just read an article by Dr. Alexander Morison, in the *West London Medical Journal* for January, 1904, which serves to afford a theme for editorial consideration. The title of his paper is "Boldness in the Treatment of Heart Disease," and as may be imagined from this title, he devotes several pages to urging his professional colleagues to resort to more radical measures than they are accustomed to in instances in which cardiac failure is present. Part of his paper we have abstracted and published in the Progress columns of this issue of the GAZETTE. It will be seen that he strongly advocates the employment of doses of the tincture of digitalis as large as 30 minims at intervals of four hours until a definite effect is produced upon the action, force, and capacity of the dilated and failing heart; and in some instances he advocates the combined use of strophanthus and digitalis until 300 minims of these tinctures have been taken. The whole object of his paper is to encourage the more general employment of what might be called massive doses of this powerful drug.

We have no doubt that cases are occasionally met with in which heroic doses of digitalis are not only advisable but absolutely necessary, if the patient's life is to be saved; and we have no intention of taking an opposite position to that occupied by Dr. Morison, and advocating the employment of minute doses as a routine measure in the treatment of cardiac disease. But increasing experience seems to make it clear that many physicians are accustomed to use large doses of digitalis in cases of heart disease, and to continue their use over a very considerable period of time. The issue which we wish to take is not that Dr. Morison is wrong in advocating boldness, but that boldness must, in many instances, be tempered by good judgment, by a careful consideration of the actual condition of the patient, and of the time during which he has been taking the remedy. It is a fact well known to every one who is conversant with careful studies upon digitalis that it is slowly absorbed, and that it equally slowly develops its stimulating effect upon the heart muscle. Again, it is also well known that digitalis produces an effect which lasts over a very great length of time, and that it may cause symptoms of more or less severe poisoning if large doses are continually administered, and actually absorbed.

Within the last few weeks we have heard a most excellent practitioner of considerable experience express the belief that digitalis rarely, if ever, produced dangerous symptoms when given in massive doses, and at that time, and now, we feel that we must take issue with him concerning this statement. In 1897 the writer of this editorial published an original article in the pages of the THERAPEUTIC GAZETTE in which he gathered together information from a number of well known clinicians as to whether digitalis was capable of producing a so-called cumulative effect, the existence of which has been denied by some, and positively asserted by others. The result of that collective investigation, and the result of further experience, have

served to indicate that digitalis does produce a cumulative effect; not because it is a drug which possesses properties peculiarly dangerous in itself, but because in its administration we must never forget four factors which are to be carefully considered whenever a powerful drug is given. These four factors are: the size of the dose administered, the size of the dose absorbed, the rapidity with which the drug is eliminated, and the length of time during which its effects are maintained.

To the mind of the writer the question of the administration of large doses of digitalis is not very different from the question of the administration of large doses of mercury in the treatment of syphilis. We all know that in many cases of active syphilis it is the duty of the physician to establish a thorough mercurial influence at the earliest possible moment, and every syphilographer of experience also knows that it is necessary, after a mercurial influence is established, to administer doses which are about half the size of those first employed, since by this means a full mercurial effect can be maintained without producing evidence of excessive mercurialism. The reason for this therapeutic procedure is that mercury is a drug which is slowly absorbed and slowly eliminated, and after the system has become thoroughly impressed by the remedy its elimination progresses so slowly that half the original dose is able to maintain a full mercurial effect. So it is with digitalis. There are cases of cardiac failure during the course of acute diseases, and during the period of ruptured compensation, when it is essential that the heart shall receive the stimulating and supporting influence of this great cardiac tonic at the earliest possible moment. For this purpose large doses should be given. As soon, however, as there is evidence that the drug has taken control of the heart, we believe that the dose should be cut down to one-half or one-quarter of the former dose, and that its further effects should be most carefully watched. In many other instances, where the condition of the patient is not urgent, we believe that large doses of digitalis at any time are not only unnecessary but very prone to disturb cardiac rhythm, and we have constantly seen good effects from such small quantities as two or three minims of a physiologically tested tincture of digitalis given three times a day. In some instances, where the condition of the heart is urgent, it is the habit of physicians to resort to the tincture of digitalis given hypodermically. We cannot help feeling that this is a very uncertain method of medication, for as soon as the tincture comes in contact with the juices of the tissues it is precipitated, and the rapidity of its absorption can in no way be estimated. Not only is this true, but it is probable that if the drug is given by the stomach with some gastric stimulant, such as strychnine, capsicum, or Hoffmann's anodyne, it will be absorbed much more rapidly and certainly than if it is put in subcutaneous tissues. We have more than once seen digitalis, given hypodermically in large doses for several days, produce no evidences whatever of any cardiac effect, and then, with some sudden change in the condition of the patient, such for example as that which occurs in the crisis of pneumonia, the digitalis has been rapidly absorbed and produced an effect which was practically poisonous, and certainly dangerous.

THE PREVENTION OF PNEUMONIA.

The intention of this editorial is not to deal with drugs which are to be used for the prevention of pneumonia, because, so far as we know, no such drugs exist. It is, however, important that every physician should recognize that croupous pneumonia is an acute infectious disease, and that as such we should take all possible measures to prevent its spread. There is reason to believe that persons who because of moderate vitality are prone to infection by the pneumococcus may very readily become ill if exposed to this organism. Several times within the last few years we have been impressed with the carelessness of physicians in regard to the possibility of infection by this germ. We have repeatedly seen patients, ill with pneumonia and influenza in hotels, cough violently, and unintentionally expel upon the blanket which covered them tiny particles of sputum which were literally reeking with pneumococci or with the specific microörganism of epidemic influenza. While the pro-

prietors of these hotels doubtless took care that the bed linen was carefully washed after being used by such patients, in the majority of instances they certainly were not instructed that the blankets were sources of dangerous infection, and doubtless other persons, many of whom were in impaired health, who have slept under these blankets have become infected by pneumonia, and have wondered where they have acquired the disease. Again and again we have seen the carpet exposed to similar chances of infection, and it is by no means uncommon to see a patient rest the surgical gauze into which he has expectorated upon the blanket which is in front of him.

While most physicians insist that patients with tuberculosis shall expectorate into spit-cups or cloths which either contain antiseptics or which are at once disinfected, they are far too frequently lax as to the orders which are given for similar treatment of the expectorated material in croupous pneumonia. While we have no way of destroying the pneumococcus when surrounded by some of the conditions which seem favorable to its existence, it is certainly the duty of the physician, not only for the sake of his patients, but also for his own benefit, to see to it that the myriads of cocci cast off by a patient with pneumonia are destroyed before it is possible for them to do further damage by infecting other persons.

THE QUESTION OF INTESTINAL ANTISEPSIS.

For many years a very large part of the medical profession has been convinced that it is possible by the administration of certain drugs to produce a condition of so-called intestinal antisepsis, or, to speak more correctly, intestinal asepsis. Other members of the profession hold that this is a scientific impossibility because they consider that any substance which is powerful enough to destroy the microörganisms in the bowel will also be strong enough to destroy the human protoplasm. Again, it has been considered that most of the so-called intestinal antiseptics are absorbed from the bowel, and therefore cease to exercise their antiseptic influence long before they have passed very far along this tube; or, if they are not absorbed, they are so altered chemically as to no longer possess antiseptic properties. Again, there has been much evidence adduced to prove that the bowel contains a large number of microörganisms, benign in character, whose function it is to aid the digestive juices in the splitting up of various substances taken as food, and so it has been thought that to give intestinal antiseptics would, if they were powerful enough to really destroy bacteria, damage both pathogenic and benign microörganisms, and so, while doing good on the one hand, would do harm on the other. There can be no doubt that there is a considerable amount of force in these latter statements, but on the contrary there is a good deal of weight in the argument that the popularity of intestinal antiseptics proves that they must be advantageous. If they were not they would not be so universally employed. There can be no doubt that the administration of certain of these drugs does diminish intestinal flatulence and the signs of fermentation in some cases. For these reasons we are much interested in an article by Strasburger, which is quoted by Hemmeter in an article contributed by him to "Progressive Medicine" for December, 1903.

Strasburger believes, as the result of clinical observation and animal experimentation, that it is useless to attempt intestinal antisepsis by the administration of drugs. He believes that the administration of these remedies may cause a slight decrease in bacterial growth in the small intestine, but asserts that this is soon followed by an increase which is due to interference with the natural protective powers of the bowel. He thinks that where there are marked evidences of intestinal putrefaction a much more efficient method of treatment is by cleansing the bowel with purgatives. While Hemmeter is inclined to regard Strasburger's observations as possessing a good deal of weight, he is not inclined to combat the wide-spread professional confidence in intestinal antisepsis, and quotes another paper by Stern which seems to indicate that while it may be impossible to destroy microörganisms in the bowel, it is, on the other hand, entirely possible to interfere very materially in their growth. After all, this is what antisepsis means. It is probably true that there are no true in-

testinal germicides, but that there are a considerable number of substances which, if administered skilfully, destroy and inhibit the growth of microörganisms in the bowel.

SHOULD THE QUANTITY OF POTASSIUM BE CONSIDERED WHEN GIVING LARGE DOSES OF THE SALTS OF POTASH?

We have on more than one occasion stated our belief that physicians were prone to neglect the power of potassium upon the economy when administering large doses of the iodide of potassium, of the bromide of potassium, or of the vegetable salts of potash. We have repeatedly seen instances in which children were markedly depressed by full doses of so innocent a drug as the citrate of potash, and we believe that some of the depression following the use of large doses of the bromide of potassium is due to the potash base. We have therefore read with some interest the results of an experiment which has been carried out by Kleeberg, of New York, upon the influence of potassium sodium tartrate upon the circulation. In these experiments he found that neutral sodium tartrate, when introduced intravenously, in moderate amounts, stimulated the heart and caused a rise of arterial pressure, and that the depressant effect of sodium potassium tartrate depended upon the potassium which was present, confirming our view that this base of substances is capable of producing evil results at times when very large doses are administered.

CONTINUOUS LOCAL INFECTION.

So much study has recently been concentrated upon the deleterious effects of poisons circulating in the system because of imperfect digestion and assimilation, effects particularly noticeable in regard to the nervous and vascular systems, that attention has perhaps been diverted from the profound constitutional depression which may be incident to a continuous absorption of toxins from a point of infection in itself of apparently small moment. Thus it is well known to the genito-urinary surgeon that a chronic follicular prostatitis, causing few if any local symptoms, associated with a very small quantity of pus in the urine, may completely undermine the health, producing a condition of neurasthenia so pronounced as to border closely upon some forms of insanity. The throat specialist recognizes an equally deleterious influence upon the health as the result of a chronic sinusitis or even a lacunar tonsillitis. The gynecologist notes conditions of invalidism absolutely dependent upon pelvic collections of pus which in themselves give rise to slight and almost negligible local symptoms. The abdominal surgeon often completely restores to health a physical wreck by the removal of a catarrhal appendix, sometimes associated with small extra-appendicular purulent collections which, at the most, cause directly local tenderness and intestinal catarrh.

The particular form of local infection to which Godlee (*Lancet*, Dec. 5, 1903) calls attention as a source of deterioration in health is pyorrhea alveolaris. This is so common and insidious as to excite little apprehension. Many uncleanly people suffer but little from it, even though the gums be spongy, the teeth loose, and the breath incredibly foul. Among the well-to-do and cleanly—those who regularly scrub their teeth—complaint is usually made to the effect that the gums bleed readily when the tooth-brush is used, that there is a disagreeable taste in the mouth, and sometimes that there is a disagreeable pus-stained expectoration. The odor is often unnoticed by the sufferer.

In the clean mouth the signs of the disease are fairly obvious, consisting in the main of a broad red line at the edge of the slightly retracted gums, and perhaps pus, which can be squeezed from between the gums and the fangs of the teeth, there being formed a sort of pocket in which the foul secretion collects.

It is often a family disease, and is associated with deposits of tartar on the fangs of the teeth. It begins in young adult life, and if undetected leads to premature loss of teeth. By many it is held to be associated with gouty diathesis.

Of the various diseases caused by this constant source of septic absorption may be mentioned fever, rashes, profound septicemia, purpuric hemorrhages and bleeding from the gums, toxic neuritis, septic gastritis, stomatitis, pharyngitis, tonsil-

litis, ulcerative endocarditis, pernicious anemia, and chronic dyspepsia. None the less, it must be recognized that many persons suffering from pyorrhea, as is true of all local affections, remain in perfect health.

Godlee reports a number of instructive cases showing the profound systemic effects produced by suppurating gums, and calls attention to the necessity of the surgeon thus afflicted protecting the patients upon whom he operates against infection by wearing a mask and keeping his mouth closed, and by practicing a preliminary cleansing of the mouth before operation.

In regard to treatment, the first step according to the dentists consists in the removal of the tartar from the fangs, after which the organisms contained in the pockets are attacked by antiseptics, applied either in the form of syringing or packing. Sometimes it is needful to slit up the pockets.

By a system of thorough prophylaxis—a thorough cleansing of the teeth and an active treatment of the suppurating pockets—for a brief spell, followed by repeated cleansing and treatment once a month, it is now claimed that this disease can be cured in its early stages and arrested even when well advanced.

TOTAL EXTIRPATION OF THE STOMACH.

This operation, at one time regarded as an absolute impossibility, has now been repeated with sufficient frequency to show not only that it is practicable as a surgical procedure—*i.e.,* can be done without killing the patient on the table or causing him to perish immediately after operation—but that under certain circumstances it may be distinctly advisable.

According to Moynihan (*British Medical Journal,* Dec. 5, 1903) the first complete extirpation of the stomach was performed in 1883 by Connor. The patient perished on the table. A number of other partial extirpations was reported before the first successful total extirpation was reported by Schlatter. The entire organ was removed, and on microscopic examination the specimen showed the duodenum at one end and the esophagus at the other. The cut end of the duodenum was closed by suture and the esophagus was united to the jejunum. This patient, more than fifty-six years old, lived fourteen months, and then died of local recurrence. Her health after operation improved, she taking food and gaining in weight. The third case was a patient of Brooks-Brigham, in 1898. The duodenum was united to the esophagus by means of a Murphy button. The patient, sixty-six years old, recovered, and was well two years after operation. The fourth operation was performed by Maurice Richardson, the patient living eleven months and then dying of recurrence. Macdonald operated on a patient thirty-eight years old, uniting the duodenum and esophagus by a Murphy button. The patient was alive and well eighteen months later. In all Moynihan has collected sixteen cases, with six deaths and ten recoveries.

The junction between the intestine and esophagus was made by either simple suture or Murphy button, or the esophagus and duodenum were both closed by suture and a later anastomosis made, or the esophagus was closed by suture, and the open end of the duodenum was stitched to the skin.

Moynihan operated upon a patient aged forty-nine, with the typical symptoms of "leather-bottle stomach." On section the entire organ was found to be invaded by the growth, and the glands along both curvatures were enlarged. The entire stomach was removed. The cut end of the duodenum was closed by suture, and to the lower end of the esophagus a small clamp was temporarily applied. An anastomosis was made between the esophagus and a loop of the jejunum pulled upward through a rent in the transverse mesocolon and secured to the esophagus by a double line of suturing, and also another to the diaphragm. This suturing was made while there remained in position an esophageal tube passed downward from the pharynx and inward into the distal portion of the duodenum. This patient died of shock in six hours.

Of the seventeen cases reported thus far, then, the deaths numbered seven and the recoveries ten, an extraordinarily favorable result for such a formidable procedure, applied as it must be in the majority of cases to patients in a profoundly depressed condition. It has been argued that under no circumstances is this opera-

tion justifiable, since when the stomach is involved so extensively as to require it there will necessarily be metastatic growths elsewhere.

Moynihan, however, notes that an examination of many records, specimens, and cases demonstrates the fact that exceptionally the entire stomach may be infiltrated in the absence, even on minute post-mortem examination, of secondary deposits. The operative difficulties he holds are less than would be anticipated. He notes that the esophagus can be freed from its union with the diaphragm by stripping with the finger, though this is not desirable, and that the esophagus was in his case more accessible when the patient's neck was fully flexed, the chin being pressed downward in the sternum. He also found the use of the esophageal tube a distinct help, and he protests against the term gastrectomy being applied to the operation, in which a small part of the stomach is left.

The importance of Moynihan's communication is dependent not so much upon the apparent satisfactory mortality attending this operation, since based as it is on a statistical study of published cases it is doubtless misleading, but rather upon his statement that there are cases in which even if the stomach be completely infiltrated by malignant growth, the disease is still confined to this organ. If any such exist, the operation of total resection is indicated. The presence of nodules in the liver or evident irremediable metastases in other regions would, of course, contraindicate any but a palliative operation.

Reports on Therapeutic Progress

THE TREATMENT OF CHRONIC DEAFNESS.

In the *New York Medical Record* of November 2, 1903, KERRISON gives the following summary of his views:

1. There are certain cases of advanced catarrhal deafness—even among those in which no evidence of serious labyrinthine involvement can be found—which do not respond to treatment.

2. In the large majority of cases the power of audition can be distinctly improved.

3. In the early stages of catarrhal, or tympanic, deafness the majority of cases are susceptible of practical and complete cure.

4. In advanced stages of catarrhal deafness, rational treatment often results in an improvement, which adds greatly to the patient's enjoyment of life, though the normal hearing power may never be regained.

5. Where but slight improvement of hearing is accomplished, the result of treatment is often of value to the patient in arresting a process which might otherwise lead to very marked or total deafness.

A LARGE DOSE OF CHLORAL HYDRATE.

ACKER reports in the *New York State Journal of Medicine* for November, 1903, a case in which a large dose of this drug was taken without causing death.

At 8 P.M. on January 11, 1903, a messenger came to Dr. Acker's office and informed him that Miss A. C. N. had taken all of her sleeping medicine at one dose. He arrived at the bedside of the patient at 9 P.M., and learned from her friend that the patient had left her room on the second floor at 5 P.M.; she descended to the dining-room, where she secured the bottle and swallowed its contents—22 drachms—which contained 330 grains of chloral hydrate, 330 grains of potassium bromide, 2¾ grains of extract cannabis indica, and 2¾ grains extract of hyoscyamus. This was done during the absence of the patient's friend from the house, a period which did not exceed ten minutes.

The patient's condition when seen was as follows: Pulse 62 per minute, and feeble; respiration 14 per minute; pupils contracted, face flushed, extremities cold, and she was in a profound sleep, from which she could be aroused by violent shaking, but could not articulate a word.

Treatment.—First dose consisted of 5 drops of tincture of nux vomica, one teaspoonful of brandy, and one-half a teacupful of hot, strong coffee, and bags of hot water applied to the extremities and continued until the limbs regained their natural temperature. At each subsequent hour 2 drops of tincture of nux vomica, and all of the hot, strong coffee that the patient could swallow (about one teacupful), were ordered given. On January 12, at 9 A.M., the author again saw the patient. She could be aroused and could

speak. The same treatment was continued. January 13 she had apparently recovered, without any bad effects. The treatment was discontinued, and other remedies prescribed. She soon left her friend's residence, and when last heard from she had been placed in an asylum.

Acker finds on record cases in which 10 grains of hydrate of chloral have produced death, and cases where 350 grains taken did not result in the death of the patient.

PHYSIOLOGIC AND THERAPEUTIC ACTIONS OF ALCOHOL.

The *New York State Journal of Medicine* for November, 1903, contains an article by LAMBERT on this ever interesting subject. He sums up our knowledge concerning the drug in the following words:

Considering the physiological action of alcohol as a whole, the weight of evidence shows that it is less of a stimulant and more of a narcotic than was formerly believed. It is not a cardiac stimulant, and its action on the circulation as a whole is that of changing the equilibrium of the existing distribution of blood. How this is accomplished can only be explained at present by more or less probable hypotheses. Therapeutically, this effect on the circulation may be useful or not, depending on circumstances. In fainting attacks, in some forms of shock or collapse, when the pale, cyanosed appearance of the patient shows the blood is gone from the periphery of the body and is overfilling the vessels of the splanchnic area, alcohol acts quickly and advantageously by bringing an increased amount of blood to the brain, heart, and skin, and reducing the internal congestion. After exposure to cold, and in some forms of intestinal colic, it has a similar rapid and effective action. It has a useful narcotic action when sudden illness brings worry and distress to the patient. The euphoria produced by the alcohol is of advantage to the patient. The dual action of alcohol as a food and as a drug places it in its therapeutic consideration in a position by itself. This is especially true in its use in the infectious diseases. Many of us have seen some individuals in certain conditions of grave illness consume enormous amounts of alcohol with apparent benefit and not the slightest toxic symptoms, when under ordinary circumstances the same amounts would have produced the most profound intoxication.

The author's belief is that many patients suffering from infectious diseases do not need alcohol, and are better without it; certain patients need it under certain conditions, and are benefited by it. It is also his belief, founded on clinical experience, that because a patient has been accustomed to alcohol is not a sufficient reason for its administration in infectious diseases. Many alcoholics suffering from pneumonia will do better and recover quicker if deprived of alcohol than if given it.

When all is said concerning the value, under certain circumstances, of alcohol as a food, its use as such certainly belongs to its therapeutic place in medicine and not to its use in every-day life. Atwater correctly says that its place as a nutrient is where the user is unable, because of either debility or disease, to otherwise obtain fitting and sufficient nourishment from ordinary food materials.

Clinical experience is the final proof of the value of alcohol in disease, and though this experience has caused a lessening in its employment, compared with former times, and scientific research has proved its field of usefulness to be more restricted than was formerly accredited to it, alcohol remains a useful and beneficial drug. Like all our best remedies, it is a poison, and in its therapeutic use this fact should never be forgotten. Its abuse and its toxic action are probably the most wide-spread phenomena that come in the experience of physicians, but that action of alcohol does not come within the scope of this paper.

WHO MAY BENEFIT BY ALTITUDE TREATMENT.

HALL contributes to the *Medical News* of November 21, 1903, a paper in which he gives us good ideas as to this subject. He says that there is one variety of phthisis little dwelt upon in the text-books which should be mentioned, for the author believes that the cases last much longer in Colorado than in lower-lying regions. He refers to the type seen in certain young adults with moderate loss of weight, practically normal temperature, with little or possibly no appreciable dulness, but with constant cough, consider-

able expectoration containing abundant bacilli, great dyspnea, and upon examination, lungs bristling with fine moist râles. He has in mind three such cases, each of three to ten years' duration, with such slow downward progress that it could scarcely be noticed. He has never observed this type in New England, and doubts if it could exist there for such lengths of time. The prognosis is so much better as to time than one would at first believe that they should be carefully separated from the ordinary type, and sent to the high, dry regions. The dyspnea may be severe for a time, owing to the obstruction of so many bronchioles, but the disease process does not seem here to extend to the lung tissue as one would anticipate.

Persons with a bad family history of tuberculosis may well consider the advantage of moving permanently to a high, dry region before the advent of signs of the dreaded disease. In cases where the lung does not entirely reëxpand after pleurisy with effusion, two reasons should counsel us to send them to a considerable altitude: first, the rarer atmosphere favors the expansion of the crippled lung; and secondly, the development of tuberculosis is thereby directly rendered less likely. In addition, we have the general antituberculous effect of the climate, even though the lung cannot reëxpand because of adhesions.

There is no question that glandular tuberculosis progresses more favorably here than at sea level. This opinion is certainly held by Dr. Leonard Freeman and other surgeons of Colorado who have had experience both here and in large cities of the East.

Many cases of asthma are permanently relieved in this climate. The less the association with asthma, or its twin evils, chronic bronchitis and emphysema, the greater the chance of such permanent relief. If, however, the emphysema be not extreme, or associated with weakness of the right heart, such cases may be safely regarded as favorable for altitude treatment. The well known purity of atmosphere of higher regions does much more good than the decreased density of the air does harm, the relief of the spasmodic element and of the bronchitis being the striking features in bringing about the improvement.

Almost constantly in those who have lived for many years in the mountains one may observe an increased chest development virtually amounting to moderate emphysema. This is a compensatory process, because of the need of great lung surface. Its origin, however, should teach us that the improvement in asthma and chronic bronchitis in this region is in spite and not on account of the emphysema. On the plains of eastern Colorado the lower altitude is more favorable for cases with decided emphysematous changes.

The complication of tuberculosis of the lungs by organic heart disease often causes difficulty in deciding where to send a patient. The author believes we shall generally be right if we most respect the predominant condition. If any material dyspnea be caused by the heart trouble, only an incipient tuberculosis would probably be susceptible of improvement in a high altitude.

No especial difference is observed in the behavior of valvular heart disease or myocardial affections at Denver from that at sea level if compensation be good. If it be on the point of failing it is a risky experiment to send the patient to any great elevation. In such a patient scarcely any condition is susceptible to improvement by altitude treatment.

THE TREATMENT OF THE CARDIAC TOXEMIA OF PNEUMONIA.

A valuable article with this title is contributed to the *New York Medical Journal* of January 2, 1904, by ELSNER. In his opinion there are three remedies which, when properly administered, meet the indication presented by the circulatory changes of pneumonia due to paralysis of the vasomotor centers, the dilated condition of the arteries, and the weakened heart. These are strychnine, digitalis, and suprarenal extract, or adrenalin, its active principle. As to the use of strychnine and digitalis, the author simply gives his opinion that they should be used hypodermically. Adrenalin acts on the heart and blood-vessels favorably; it does not act on the vasomotor center; hence it may be used to assist strychnine. When the vasomotor center is exhausted and blood-pressure study proves the inefficiency of strychnine, adrenalin may still be administered, and in some cases which seem un-

promising, when combined with the method of stimulation about to be suggested, we may carry the patient beyond the critical period to a safe recovery. Suprarenal extract, or adrenalin, has seemed to act as a needed food in all infections where there is danger of myocardial degeneration. While writing this paper the author saw a case of pneumonia, in consultation with Dr. Doust, in a woman, the mother of five children, in whom it had been impossible to raise a continually lowering blood-pressure with strychnine. The systolic blood-pressure was almost immediately raised by the repeated administration at short intervals of fifteen minims of a one-to-one-thousand solution of adrenalin hypodermically, and the patient was saved.

With the large doses of digitalis recommended originally by Petresco the author has had no experience. To treat the cardiac insufficiency resulting from pneumococcus toxemia, the heart and vessels must be guarded against unnecessary wear and tear during the hours of imminent danger while the spinal centers are being exhausted. To bring to our notice the method of accomplishing this end is the object of this paper.

At this point the author quotes from a former paper, and says that the profession has long since learned the value of the diffusible stimulants. Unfortunately their effect is evanescent; the author's plan of treatment includes the administration of these at very short intervals during the continuance of cardiac asthenia. The stimulating effect must be continuous during the critical period. The remedy must be administered before the preceding dose has lost its effect. In no other way can we accomplish the desired result.

During the past the author has treated this condition by administering, every fifteen minutes, fifteen drops each of the compound spirit of ether, aromatic spirit of ammonia, the compound spirit of lavender, and the tincture of valerian. This is kept up day and night until the pulse shows improved tone and the heart action is decidedly better.

The valerian is added because of its quieting effect when administered in these small doses with the diffusible stimulants. Occasionally we meet patients who are unable to retain the mixture when it contains valerian, hence we have been forced to omit it and to substitute either pure whiskey or brandy in corresponding doses. If the compound spirit of ether is distasteful it has been omitted, and the dose of the ammonia and lavender has been doubled. The frequent administration of the compound has not seemed to annoy the patients, for as a rule they are not awake longer than is necessary to swallow the remedy. The author has still further insisted upon the internal administration every two, three, or four hours, according to the urgency of the symptoms, of 0.015 gramme (one-quarter grain) doses of sparteine sulphate, with from 0.24 to 0.36 (four to six grains) of caffeine. Both of these drugs must be administered in larger doses than are usually prescribed if desirable results are to be obtained. They affect favorably the weakness of the right heart.

Finally, the alcoholic stimulant upon which the writer depends is Tokay wine, and he asserts he knows of no stimulant which has accomplished so much, and which in his hands has saved so many patients, as this Hungarian wine. This is administered in tablespoonful doses every half-hour, and is given with the ethereal stimulant when due.

Occasionally it is necessary to use high rectal injections of coffee and whiskey, and hypodermic injections of ether, sterilized oil, and camphor during periods of collapse—with subcutaneous or intravenous injections of saline solution according to the method recommended by Henry.

The administration of the diffusible stimulants as above recommended, with the numerous other remedies suggested, may appear to be bordering upon polypharmacy. To this the author pleads guilty, but in extenuation he states that we are dealing with a condition of extreme danger—one which must be met by rigorous and continuous medication. The remedies are not antagonistic.

Because of these facts we must be ready to supply the remedy anew before the heart and arteries have again lapsed into a condition which, if allowed to continue, will favor the formation of heart clot, pulmonary edema, and carbonic acid poisoning.

Oxygen has been used in many cases in a sort of routine fashion, but the author has never been able to determine the relative value of this remedy. Pulmonary

edema with heart weakness presents a very serious complication. Here the lungs are flooded with a bloody serum, death following speedily in spite of any known remedy. Of the faithful administration of ethereal stimulants, a treatment which cannot be carried out without skilled and faithful attendants, the writer feels justified in speaking with great confidence.

Equally gratifying and satisfactory have been the experiences of his colleagues on the hospital staff, and of those met in consultation practice. He has abundant clinical proof in the records of desperate cases ultimately saved, in many of which the general condition of the patient hardly seemed to justify the great labor of carrying out the treatment. In the treatment of pneumonia it will always be rational to follow the teachings of Wunderlich and Liebermeister; these authorities hold that the temperature requires less consideration than does the pulse. To sustain the heart and vessels, to give to these the resistance needed that all may continue functionally active beyond the critical period, fortunately not long postponed, must be the object of the therapeutist in combating pneumonia toxemia; and it is held that the treatment with ethereal stimulants, given at short intervals with the other remedies suggested, leads to results which are life-saving and at times agreeably disappointing. However desperate the condition, the writer recommends persistence in the use of the diffusible stimulants, always administered with the idea of meeting the fading effects of the preceding dose.

TREATMENT OF TAPEWORM.

The *Medical News* of November 14, 1903, contains an article by S. P. GERHARD upon this subject. As he well says, the great drawback to nearly all the methods of treatment in this condition is the large doses of medicine required and the loss of time to the patient from his occupation during its application. In looking over some of the formulæ that are highly praised and which seem to be largely used by many regular practitioners, we find the dose measures a pint or more of a bitter and nauseating mixture which has to be taken at one or two draughts. In delicate, weak, and debilitated patients this is a serious matter, and the treatment then becomes almost barbarous.

In these days of elegant pharmacy and improved methods of administering drugs there is no need to keep to the old yet efficient methods, but turn our attention to applying these same old remedies in a better and much more acceptable form.

To this end the author has found a combination of two drugs, namely, malefern and pelletierine, most suitable, applied in the following manner:

There is no necessity for the patient to make several days' preparation. The loss of one meal—a breakfast—is all that is required. In many cases the most convenient day to select for giving the medicine is Sunday, for the reason that most patients are at leisure at that time.

Instruct the patient to clear out the bowels the day previous with one or two large doses of castor oil or salts. One dose may be given in the morning and one at night, an hour or two after a light supper.

The next morning, as early as possible, say at six o'clock, give at one dose pelletierine tannate, 20 grains, in two capsules. In about two or three hours begin with the following:

℞ Oleoresinæ aspidii, ʒij;
Aetheris, fʒij;
Hydrargyri chloridi mitis, gr. xij.

M. et div. in capsulæ, No. xvj. S.: Two every ten minutes.

Of course it is understood that no food is taken during this time. In about two or three hours the worm will be expelled whole, with its head fastened to its neck.

Recently, in seven cases, the author has found this method to give successful results without any recurrence. It is generally difficult to find the head on account of its small size, and one cannot give assurance that there will not be a return of the parasite unless the head is found, or after the lapse of six or eight weeks when no segments are found in the stools.

It is well to instruct the patient to pass all bowel movements into a vessel of water on the morning the medicine is taken. In this way the worm can be secured when it is passed and saved for examination. No traction on the worm when it protrudes from the anus should be permitted for fear of tearing the head off and losing it.

The patient can then rest, and if there is any depression light food may be allowed. This depression is slight, and in

the author's experience has never been known to last longer than two hours.

[We cannot help feeling that the doses of pelletierine recommended are very large, being about twice the ordinary maximum dose. No oil should be used after giving aspidium.—Ed.]

ON BOLDNESS IN THE TREATMENT OF HEART DISEASE.

Morison in the *West London Medical Journal* for January, 1904, urges radical measures in the treatment of heart disease. He mentions the case of a patient with evidences of progressive cardiac failure. He is dyspneic in various degree, his cardiac area of percussion is increased, he shows the evidences in the heart, and it may be in other organs, of the effects of a residual accumulation of blood within the chambers of the heart, right or left, or both right and left. He is put to bed, his primæ viæ unloaded; his age, and the general state of his vessels and other organs, as well as the particular condition of his heart endocardially, myocardially, and pericardially, are taken into consideration. Finding, as is unfortunately found in many cases, that rest, dietetics, and general care have, unaided, little effect on his state, the influence of small doses of the infusion or tincture or powder of the well known pharmacological antagonists to cardiac dilatation and imperfect systole is tried, or combined with these, under certain circumstances, are mercurials, neural stimulants, or more powerful vasomotor agents such as the nitrites. Fortunately, in many instances, these measures are soon successful. Not every abdominal case comes to laparotomy; nor does every cardiac case require a bolder method of control. But, on the other hand, many cases unfortunately do require such treatment, if they are not to be allowed to drift into hopeless failure. The danger then lies, as in abdominal cases, in delay, with merely palliative treatment and the Micawber-like expectancy of something beneficial resulting from a timid use of agents and a plaintive hope in the recuperative powers of nature.

A large majority of the cases referred to are met with in people either young or in the prime of life. The vessels are pliant, the reserve force of the patient is commensurate with his development and age, but the golden bowl is broken at the cistern, and the silver cord is in imminent peril of being loosed, unless we can effectively come to the aid of the laboring heart and surcharged venous system. How are we to do this? How is the patient to be prepared for the action of an agent which, held by the physician in a vial, is as powerful for good and for evil as the knife which the surgeon holds in his hand. The vascular system of the patient must be relieved of a certain quantity of blood if necessary, varying from four ounces to half a pint, by venesection, which, for reasons we cannot consider now, is more effective than leeching; his anasarcous limbs must be drained by Southey's tubes, or by incision; fluid effusion hampering respiration in chest or abdomen must be removed so far as possible; and all this, not with any great expectation of these measures being successful in themselves, although this is not impossible, but to prepare the medical patient, as the surgeon prepares the surgical patient, for the use of the powerful agents which the physician has at his command. These are digitalis, or its congeners in action; and of these it is agreed that digitalis and strophanthus are the most useful, as they are also the most powerful, and that the tinctures of these, which contain all the active principles of the plant, are the most efficient, as they are also the least irritating, preparations of the drugs, in cases suitable for the method about to be described. Small doses, then, in the majority of cases have previously been tried in vain. So far as we can determine, the vessels in this patient are sufficiently normal, and the heart itself is untethered by firm extraneous adhesion. The drug is then given in 15-, 20-, 25-, or 30-minim doses in the adult at intervals of four hours, until a definite effect is produced upon the action, force, and capacity of the dilated and failing heart. This may require the continuous administration, in such doses, of the combined tinctures of strophanthus and digitalis, until 200 or 300 minims have been taken. The patient may feel a little nausea at the end of the course, but his laboring heart may be acting slowly, smoothly, and with increased force, and the patient himself experience a relief to which he has been a stranger for weeks. This effect may be permanent or it may be transient. The physician is not always successful any

more than a surgeon. But both have worked for and merited a success which they cannot always command. Man is mortal.

In laying emphasis on this principle of boldness in the use of the digitalis group under appropriate circumstances, a new doctrine is not inculcated, for it is as old as Withering, who first used digitalis with success in certain dropsies, of the organic cause of which he was ignorant, and it has been taught with no uncertain voice by others, and notably in recent times by the late Dr. George Balfour, of Edinburgh. But it is a doctrine which has been preached in large measure to deaf ears, and we still find Dr. Micawber, whether specialist or generalist, tinkering from week to week with doses and methods which are as likely to affect the action of such a heart as, to use Sydney Smith's simile, tickling the dome of St. Paul's is likely to convulse with laughter the Dean and Chapter of that celebrated fane.

THE TREATMENT OF TUBERCULOUS MIXED INFECTIONS WITH ANTI-STREPTOCOCCIC SERUM.

MENZER reports in the *Münchener medicinische Wochenschrift* of October 27, 1903, the results obtained in twenty-two cases of pulmonary tuberculosis treated with antistreptococcic serum. Of eleven cases treated during the first stage of the disease (Turban's classification), eight were cured in the sense that all catarrhal manifestations disappeared, and only slight dulness over the apices with insignificant changes in the character of respiration remained. Of eight cases in the second and third stages, one was cured and seven were improved. Three cases treated in the third stage were not benefited. The reaction began, as a rule, in from four to six hours after the injection was made, and consisted of headache, severe cough, and increased expectoration. The expectoration showed an abundance of streptococci and diplococci, and in some instances an increase in the number of tubercle bacilli occurred. The injections are repeated in from four to eight days, and the initial dose of 0.5 cubic centimeter in cases of the first stage was gradually increased until doses of 5 cubic centimeters were given. In cases in the second and third stages the initial dose was generally 0.2 or 0.3 cubic centimeter. The good effects of this treatment are supposed to depend upon the production of a reactive hyperemia in those areas of living tissue in which streptococci and tubercle bacilli are associated. This hyperemia diminishes the vitality of both organisms. Menzer has found that patients thus treated are more amenable to dietetic and hygienic measures, and he believes, too, that the destruction of streptococci, which are almost invariably present in cases of pulmonary tuberculosis, would enable the vital powers of the body to resist tubercular infection, even though no direct influence were exerted on the tubercle bacilli themselves by the antistreptococcic serum.

THE EFFECT OF LEMON JUICE IN THE MIXTURE KNOWN AS LEMONADE UPON TYPHOID POLLUTED WATER.

Some months ago secular papers teemed with reports dealing with this subject, and BISSELL makes in the *New York Medical Journal* of November 2, 1903, the following conclusions covering it:

First, that lemon juice in the proportion given has very little, if any, germicidal action upon typhoid bacilli.

Secondly, that this method of treating water to prevent a possible typhoid infection should be discouraged.

PHYSOSTIGMINE IN THE TREATMENT OF INTESTINAL ATONY.

As a result of experiments upon animals, CURLO, of Genoa, concludes (*La Riforma Medica,* Sept. 16, 1903) that physostigmine exerts a stimulating effect upon the muscular fibers of the intestine, thereby augmenting peristalsis. He finds that the nearer the drug is brought into direct contact with the intestinal mucosa the greater is the degree of peristalsis produced. Thus, even the smallest quantities introduced into the bowel through an abdominal incision cause marked peristalsis, and doses as low as one milligramme injected into the rectum give rise to considerable intestinal contraction, whereas when the drug is employed hypodermically, eight milligrammes is required to produce even slight contractions. Curlo has used the drug therapeutically as well as experimentally, and he states that it is

particularly useful in the treatment of constipation depending upon intestinal atony, and in meteorism. He considers the salicylate of physostigmine to be the best preparation for general use, the ordinary daily dose being from two to three milligrammes (1/30 to 1/20 grain), given in keratin-coated pills, which are not dissolved until they reach the intestines. For rapidly overcoming meteorism, however, one to three milligrammes may be dissolved in water and injected into the bowel. Suppositories containing two or three milligrammes of the drug have also been employed with good effects. Contraindications to the use of physostigmine are constipation due to spasm of the bowel, acute and chronic intestinal catarrh, and enterocolitis.

INTERNAL ADMINISTRATION OF ICHTHYOL IN PULMONARY INFECTIONS.

In reporting the use of ichthyol in pulmonary disease to the *New York Medical Record* of November 21, 1903, ROSENBERG tells us that the sputum was at once changed in character and amount, and cough entirely ceased within one month, at which time his patient's weight had increased fifteen pounds. The number of bacilli in her sputum after one month's treatment was reported by the health department as few. She made a gradual recovery. After nine months there were no bacilli to be found upon repeated examination. All medication was then stopped, and although this woman was kept under observation for over two years, there has been no return of either cough or tubercle bacilli in the sputum. Although the author does not put this remedy before the profession as a specific, he is positive that much good may be derived from the use of ichthyol, together with judicious hygiene and a sufficient dietary.

DIET AND DRUGS IN NEPHRITIS.

The *Medical News* of November 28, 1903, contains an article by GORDON on this topic. He thinks that the value of diuretics in acute nephritis when urinary secretion has almost or entirely ceased is a contested point. Theoretically, they may be contraindicated in many cases, and high authorities advise against them; but theories and the dictum of authorities often wane before facts. The author vividly recalls two cases of scarlet fever occurring years ago in his father's family. The good old family doctor made an acetic extract of iron, so to speak, by dropping rusty nails into vinegar and drenching his patients with the potion, and he also recalls how busy the attendants were kept carrying off the dropsy, and how rapidly the sick ones recovered. A year or two ago Gordon was called in consultation to a man suffering from acute parenchymatous nephritis. The kidneys had apparently stopped working, and nothing but the profuse diaphoresis maintained by the attending physician saved the patient from fatal uremia. It was concluded that infusion of juniper and bitartrate of potassium should be given. The result was magical; free diuresis set in, and the case rapidly went on to convalescence. Such happy results are often obtainable in chronic cases when the tubules become blocked. Irritating diuretics may do harm, but we are fortunate in possessing many agents which need not be mentioned, but which are non-irritating and productive of the greatest benefit. In this connection it is well to remember that an efficient cholagogue administered before the diuretic or in conjunction with it is a powerful auxiliary in the treatment. Free biliary secretion and open bowels are frequently sufficient to produce a prompt change for the better in the patient's condition.

The usefulness of diaphoretics, particularly in acute cases of nephritis, cannot be questioned. Such remedies are spirit of nitrous ether and solution of ammonium acetate, and others have their place, but for emergencies pilocarpus stands at the head for efficacy and promptness. Depression, it is true, may accompany its action; but used with caution it is capable of changing the condition of the patient from one of imminent danger to one of comparative or complete safety.

The author makes reference to the good effect of cholagogues, and thinks it hardly necessary to mention the value of hydragogue cathartics and salines both in acute and chronic cases, and to invoke their aid when dropsy occurs, or when diuretics and diaphoretics are contraindicated or fail in their action.

Nitroglycerin is oftentimes invaluable. In acute cases of nephritis with high pulse tension and diminished flow of urine its

place cannot be easily supplied, while in chronic interstitial cases its influence upon the general and upon the renal circulation is equally pronounced. The tolerance of this drug by many patients is noteworthy. When normal pulse tension fails and the heart chambers dilate, the resulting passive congestion is to be met with drugs which force the blood through the kidney. It is here that digitalis is preëminent. In the writer's experience it has no equal, and there are few patients to whom it cannot, in one form or another, be safely and successfully administered. Its substitutes, however, may be necessary and are not to be underrated.

Although the measures used in chronic nephritis are more hygienic than medicinal, there are certain drugs, outside of those employed in complications, which serve a good purpose. Among these iron stands preëminent, especially when anemia has set in and the blood-vessels need to be nourished and strengthened. As to the particular preparation of this agent, the author admits a growing confidence in the old tincture of the chloride of our fathers and grandfathers. Much depends upon the dose and its combination with correctives and synergists. Bichloride of mercury, dilute hydrochloric acid, and liquor of the chloride of arsenic are valuable auxiliaries, whose action, whether singly or in combination with iron, is oftentimes forcibly demonstrated in interstitial cases. In parenchymatous nephritis, with anemia, dropsy, and deficient urinary secretion, the time-honored Basham's mixture can hardly be dispensed with, as it is both a reliable hematinic and diuretic. It is encouraging to observe pale urine becoming normally colored under the use of iron; this effect being one which the author desires and endeavors to obtain, and which was very noticeable in the cases of some young children which he had the opportunity of observing. When the tincture fails, other preparations of iron can be used with advantage.

In uremic convulsions no one doubts the efficacy of chloral hydrate and the bromides. There may be those who would be disinclined to use morphine, but the author does not hesitate to invoke its aid. He believes it is the only drug which in certain cases will put the physician in command of the situation, and the patient is entitled to the relief or alleviation which it secures. He asserts he has never had reason to regret, on account of any injurious effects, the use of morphine when circumstances seemed to demand its employment. That it may do harm is undeniable, but unpleasant effects can be prevented by not giving too large a dose. Veratrum viride is a remedy with which the author's experience is limited, although its virtues as a reducer of pulse tension and an internal bleeder are well established. In acute inflammatory conditions, with a strong pulse, the good results obtained from aconite must not be forgotten.

THE TREATMENT OF INFANTILE SYPHILIS BY HYPODERMIC INJECTIONS OF BINIODIDE OF MERCURY.

SCHWAB and LEVI-BING in *La Presse Médicale* of October 31, 1903, report five cases of hereditary syphilis in infants which they treated satisfactorily by means of hypodermic injections of biniodide of mercury, in doses varying from one to two milligrammes, administered once daily, in aqueous solution. The injections were well tolerated, produced no local irritation, and were followed by rapid disappearance of the cutaneous and visceral lesions. All the children gained in weight from the time that treatment was begun. The ages of these patients ranged from one day to three months.

OIL OF CADE IN THE TREATMENT OF SIMPLE CHRONIC LICHEN.

CARLE reports in *Lyon Médical* of October 18, 1903, good results from the use of oil of cade in the treatment of simple chronic lichen, having employed it in twenty-one cases, of which number ten were entirely cured, eight were very much relieved, and three were not at all benefited. The time required to effect a cure varied from one to four months. Carle thinks that the drug is best employed in the form of an ointment made with lanolin or with cocoa butter and vaselin, and he found that at least as much of the drug itself should be used as of the excipient, weaker ointments failing to produce satisfactory effects. The ointment is applied to the patch of lichen by means of active friction continued for at least five minutes, the application being made preferably at night, and the part covered with a piece of gauze. In those cases which were

cured, the itching was relieved after four or five applications had been made. Soon afterward the infiltration began to subside, and the pigmentation gradually faded. No constitutional treatment whatsoever was employed. Some of the cases which were cured had lasted as long as eight or ten years.

EMPHYSEMA AND BRONCHITIS.

In the *Clinical Journal* of November 4, 1903, SMITH, of London, in speaking of the treatment of these affections says that he has learned a little trick by experience which he thinks is worth mentioning: it is when coughing to forcibly hold the arms into the sides so as to assist by compression the expiratory forces. It helps to clear the bronchi with less violence and less prolongation of the cough, both of which are points well worth bearing in mind.

Should the patient have unfortunately got an attack of bronchitis complicating his emphysema, it is obviously our object to cure him as speedily as possible, for each attack, and especially if it is prolonged, leaves some scars behind it. The author adds nothing new to what we all know as to the treatment of bronchitis, unless it be as to the great use he has found in an old-fashioned remedy, viz., syrup of tolu, and also in one new one, viz., creosote. It is usually assumed that this latter is good for tubercle only (the author believes it comes for tubercle as near to a specific as we are likely to get, unless through some antiserum discovery), but he has tried it in many cases in which he did not suspect tubercle, as well as in those in which he did, and found it of the greatest possible benefit in cases that were apparently simple catarrh only, especially in combination with cod-liver oil. Another point is this: if the patient is in the habit of having a cold bath in the morning, don't stop it; it is in itself a healthy habit, and in a bronchial attack assists most materially in clearing the tubes.

Lastly, we have to consider the treatment of the heart in emphysema, whether it be simple emphysema or complicated by catarrh; and upon this subject the author makes one or two remarks which are by no means new, but which are so important that they will well bear repetition and emphasis. A word or two on bleeding, for instance: the author is convinced that it has gone too much out of fashion, and is sure he has saved several lives, temporarily at any rate, by a timely bleeding from a vein. It will not, of course, cure either the emphysema or the heart condition, but if matters have not gone too far it will restore a balance between the heart and its work which has been lost, and it may be that the balance may remain adjusted for quite a long interval. Blood must, when necessary, be taken freely—*i.e.*, not less than ten ounces from an adult, and better, the nearer to twenty ounces we can go. In his opinion, the necessity is measured by two factors: (1) the blueness of the lips and nose, and (2) the breathlessness of the patient. It makes one feel as happy as a surgeon after a successful operation to see the relief rapidly stealing over the patient as the blood flows more and more freely. Then the use of opium and morphine in heart troubles must be considered. It is well worth bearing in mind that morphine is one of the most, if not the most, valuable cardiac tonics we possess. It may be that it is not its true pharmacological effect upon the heart itself that is of value, though of this there is a good deal of experimental evidence when used in small doses; but much more important is the sleep it induces in most cases. Insomnia is one of the most distressing features of cardiac trouble, and a night's quiet sleep will do more to restore the body than anything the author knows of; and if, say, one-eighth grain morphine be injected, it rarely fails to give sleep. He admits that heroic doses are not advisable, but cannot make out whence comes the dread of morphine entertained by practitioners. Lastly, he adds a few practical words on digitalis, which of all the list of direct cardiac drugs—convallaria, strophanthus, etc.—seems to be the reliable one, and one that maintains its position through the changing fashion. The author's own experience convinces him that it is usually given in too large a dose; if three or four minims of the tincture, or one drachm of the infusion, or one grain of the powdered leaves do not help us, he has never found it of the slightest use to increase the dose, and with larger doses the alleged cumulative action is more likely to appear. He says alleged, because when one knows that

digitalis is a drug that is moderately quickly absorbed and very slowly excreted by the urine, then he says that he who gives digitalis and pushes it without noticing the daily quantity of urine is at fault, and not the drug he is carelessly using.

THE THERAPEUTIC POSSIBILITIES OF RADIUM.

The *Boston Medical and Surgical Journal* of November 5, 1903, sums up this novel and interesting subject as follows:

Up to this time it apears that radium has certain qualities hitherto unknown to chemical physics. For example, it gives out heat constantly, and is the source of a high degree of energy. It is capable of rendering active, substances with which it is brought into contact; it has marked physiological effects; it is fatal to life under certain conditions; and finally it is apparently curative of certain pathological conditions. An idea of the energy of radium may be had from the statement made by Professor Curie that it maintains its temperature at 1.5° C. above its surroundings, which is equivalent to saying that the heat evolved from pure radium is sufficient to melt more than its own weight of ice every hour. The facts that this evolution of heat is constant, and that radium loses none of its activity in consequence of its emanation, are the matters of interest confronting the scientific world. The character of the rays given off from the substance is as yet somewhat undetermined, but at least three varieties have so far been distinguished. In consideration of the extraordinary properties to which we have alluded, it is not a source of wonder that animal life is positively affected by the presence of the substance. Animals exposed to the salt contained in a closed tube succumb to its effects in varying periods, depending upon the time of exposure, after undergoing certain cutaneous and nervous changes. Apparently, also, the salt is capable of checking the normal development of the lower forms of animal life, as, for example, preventing the transition from the larval to the adult form in certain worms.

All this suggests at once the possible danger in the therapeutic use of the substance, and also its utility when properly controlled. Naturally experiments up to this time in treatment of diseased conditions have been few, owing to the very great difficulty of obtaining the substance. In the *British Medical Journal* of July 25, 1903, Mr. John MacIntyre writes briefly in continuation of a previous article on work which he has done. He found that lupus and rodent ulcer were very favorably affected by exposure to the rays. Mr. Frederick Soddy also suggests the possibility of applying the rays of radium and thorium to the treatment of consumption. The theory being that inhalation of radium solution gives rise to the formation of a film of radioactive matter which persists for a certain definite time, it is conceived possible that radium would continue to exert its activity in the air cells of the patient's lung after the emanations themselves had been exhaled.

All this is to a certain extent theoretical as yet, but in view of the extraordinary impetus which has been given to the therapeutic action of various little understood rays and emanations by the introduction of the *x*-ray, we have no right to assume any other attitude than one of expectant anticipation. It is perfectly clear that radium and the various substances which apparently are related to it have a definite physiological action on animal tissues. This being the case, it remains, as in other therapeutic matters, to determine sharply between the limits of danger and benefit. That this will be done experimentally in the near future there can be no reason to doubt, and we are certainly not too optimistic when we express the belief that new and serviceable therapeutic agents, through such investigations, will be found for a goodly number of human ills.

THE RED-LIGHT TREATMENT OF SMALLPOX.

Some time ago we published in the GAZETTE an article in which Schamberg of Philadelphia made an unfavorable report on the plan of treating smallpox. In the *Journal of the American Medical Association* of November 14, 1903, FINSEN replies to his attack and states that the two conditions indispensable to success are as follows, if good results are to be obtained, viz.: (1) The patient should be placed under treatment sufficiently early, and (2) the chemical rays of daylight should be absolutely shut out. The efficiency of the method is so certain that

in case suppuration should occur in a patient who was placed under treatment in proper time, the first thing to be thought of is that from want of care, either on the part of the patient or of the nurse, daylight may have penetrated. Therefore, before the method can justly be declared a failure the thoroughness with which it is carried out should be tested by exposing photographic plates or sensitized paper as a means of control in different places in the sick-room. If these photographic plates show the influence of white light the technique of the treatment has been imperfect. A few of those who have applied the method have at the same time treated the patient by other remedies as well. Such a course is objectionable for scientific purposes, as it is then impossible to decide which agency is responsible for the results. In order to give the experiments decisive scientific value they should be carried out under strict control and the patient placed under the treatment in proper time.

RADIUM AND ITS THERAPEUTIC EFFECTS.

This interesting subject is considered by MacIntyre in the *British Medical Journal* of December 12, 1903. As he well says, any statement made at present about the therapeutic effects of radium can only apply to the experimental stage of inquiry. Three questions at least may be asked, however, and these are: (1) Have the salts of radium any therapeutic value? (2) In what class of diseases are they likely to prove useful? (3) How do any results yet recorded promise when compared with those obtained from other agents, such as the Finsen light, *x*-rays, or high-frequency currents, because the phenomena observed, when studying the salts of radium, suggest at once the possibility of therapeutic action similar to that due to the last named forces? It may at once be said, from the experiments already published, that to some extent they possess therapeutic value, and for the most part, as yet in the same class of cases in which the other forces have already been tried with success. The third question is more difficult to answer, for reasons which will appear in this paper.

It may be as well to state here that, just as in the case of all other branches of electrotherapeutics, we have not yet any record of great improvement or cure in any case of serious malignant disease situated deeply in the tissues or within the great cavities of the body. Any records of results so far obtained have been in the superficial parts or within the accessible cavities. It has been suggested that small quantities of radium might be introduced into the deep tissues in serious malignant diseases and left there, but most surgeons after studying the properties of radium will meantime be careful in carrying out the suggestion, and take due precaution that the active agent can be withdrawn again if required. Be that as it may, no results of such a suggestion have so far been fruitful.

During the past six months we have learned much from the physical laboratory about the properties of radium which have a distinct bearing upon surgical work. To begin with, the one important thing when experimenting with a new agent is to find out its nature and strength. At first, when the radium salts were obtained, many concluded that all that was required was what the makers termed a chemically pure salt of the element, if element it be. This is not so, because the salts which are offered to the surgeon vary very much in what is to them the most vital thing—namely, radioactivity. Apart altogether from its enormous cost, the experimenters have the greatest difficulty in obtaining suitable specimens. A considerable number of medical men and others have submitted samples of bromide of radium to the author for an opinion, and he feels bound to state that many of them were doubtfully of any therapeutic value. It would be of the greatest value to the profession if some standard measurement could be obtained, because once in possession of this fact experimenters could regulate the dosage by the distance at which they held the salt from the part, and the time during which it was applied.

Unfortunately no such standard is easily available, and we have to fall back upon the following: (*a*) The physiological effects when applied to the tissues of a normal subject which involve discomfort and risk; (*b*) the action upon photographic plates; (*c*) the fluorescence upon a suitable screen; (*d*) the power to discharge the electroscope. Some experimenters like Mr. Soddy have methods of

their own by means of liquid, but these are complicated. In any case every experimenter should not only ask for chemical purity of the salt, but also for some guarantee of radioactivity, and he will find all sorts of figures mentioned, from 40 units (uranium being the unit) to 1,800,000 units of radioactivity. A further test, of course, may be had when once the surgeon has obtained results in a case, because he can compare one with another.

The second important question is to be found in the fact that the emanations are not all of the same kind. Since the author's last communication to the *British Medical Journal* much has been learned from the physicists about the rays which emanate from radium, owing largely to the brilliant researches of M. Curie, Professor Rutherford, Sir William Ramsay, Mr. Frederick Soddy, and others. In the paper referred to it was suggested that the physicists divided the rays into three kinds, called respectively *a*-, *b*-, and *y*-rays, and it was understood that the *a*-rays are new, whilst the second set resemble the cathode ray, or what Lenard first described, and the third set correspond to *x*-rays. Some doubt has been thrown upon the last named, and various workers have expressed different opinions on the subject. Lord Kelvin states that the experimenters believe the *a*-rays to be positively electrified bodies larger than those constituting the second set. They are easily stopped by solids, liquids, or gases, and they are acted upon by a magnet. The *b*-rays are much smaller and are probably atoms of radium or perhaps molecules of bromide of radium, negatively electrified, easily influenced by the magnet, and corresponding possibly to the corpuscles and electrons or the fine particles of matter which make up the cathode stream in the Crookes tube. Lord Kelvin goes on to say that a simple *prima facie* view is to regard the third set as merely vapor of radium. These rays are neutral and are not acted upon by the magnet. In support of this view Strutt comes to the conclusion, as the result of experiment, that in some ways the *y*-rays behave differently from the Roentgen rays. Clearly, therefore, it is important that surgeons should discover which of these rays may be the active agents.

Inasmuch as frequently the salts are applied through mica, paper, glass, or aluminum screens, it is difficult to conceive how these can affect the tissues. This reduces the question to the other two. While there is some doubt as to the third set, and will be until more is known about them, it is natural to think that the *b*-rays have more to do with the results. This view is further strengthened by the fact that even if the *y*-rays were proved to be *x*-rays, they are so small in quantity that, knowing what we do of the results of the powerful *x*-ray tube, it is difficult to see how they can produce the result. If we accept this view of the question then the *b*-rays are probably the powerful agents upon the tissues. In a commuication to the author Lodge is inclined to accept this view, of course with all reservation in the present state of our knowledge. In any case the subject is of importance, and further experiments are necessary.

What we do know, however, at present is that the *b*-rays are more penetrative than the *a*-rays, and that the *y*-rays are still more so. It does not, however, necessarily follow from what has been said that the *a*- or *y*-rays will not be proved to be of therapeutic value. On the contrary, many think they may be, and Mr. Soddy in the pages of the *British Medical Journal* suggested inhalations of the *a*-rays in respiratory troubles, and his idea was based upon physical research and their bactericidal properties.

From the fact that radium is usually applied through screens, when treating neoplasms the *a*-rays can scarcely reach them, and therefore whatever results have been obtained in these affections are not the result of their application. It remains to be seen, however, whether they will have an effect when applied differently. For this reason some experimenters are having salts of radium applied on paper, like a plaster, but of course in this case the tissues are subjected to all three emanations. Sir William Ramsay and Mr. Soddy have shown that the emanation is a gas and that this contains helium, which itself is one of the most inert substances known. The spectrum of it is not got at first from the *a*-rays, but it subsequently appears. This has led to the view that radium is not an element at all, and that it is being split up into simpler elements. This involves another question, that secondary or more changes are taking place and that necessary forces are liber-

ated. What effect these may have upon normal or diseased tissues when applied to them cannot be stated at present. Another important phenomenon as a result of the emanations is the power of fluorescence which these rays possess, and also the most extraordinary thing yet recorded of radium, namely, its power of constantly giving off heat. The possibilities of all these things must be thought of when we are trying to reason out the effects of the agent upon diseased tissues; also that they are, when in sufficient quantity, destructive to life. At present, however, nothing definite can be stated.

ABUSE OF NITROGLYCERIN.

In the course of an article on the management and treatment of typhoid fever in the *Medical News* of January 2, 1904, LEFEVRE makes the following well timed remarks:

Frequently in acute collapse, or when cardiac weakness has reached the point of causing the pulse to become dicrotic, nitroglycerin is given at frequent intervals with the idea of diminishing the work of the heart. In acute cardiac collapse Romberg has shown that there is already vasomotor paralysis, and that the failure is more vascular than cardiac, and nitroglycerin cannot under these circumstances relieve the condition. In the later stages of the disease when the pulse is dicrotic, the dicrotism is due to the relaxed condition of the arteries, and the giving of nitroglycerin does not relieve the heart, but on the other hand destroys the normal control of the circulatory system. Nitroglycerin should only be given when arterial tension is relatively too high for the cardiac power, and then only to carry the patient over the immediate danger. It is not a drug that should be given continuously for any length of time.

EXPECTORANTS, COUGH MIXTURES, AND INHALATIONS.

In the *Postgraduate* for December, 1903, CAILLE gives the following suggestions as to the use of expectorants and cough mixtures:

Cough is an expulsive effort at expectoration, and unless extremely harassing should not occasion alarm. When a cough takes its origin in the nasopharynx, nasopharyngeal toilet (salt water or petrolatum spray) is indicated, or local cauterization with a two-per-cent solution of nitrate of silver.

To allay reflex irritability and check cough, opium and its preparations may be given, with or without expectorants.

Expectorants are occasionally necessary to aid nature in expelling secretions, particularly in feeble children and very old people. Ipecac, ammonia, benzoic acid, camphor, iodide of potassium, are examples of expectorants. Free expectoration is more readily obtained when the patient receives plenty of water.

The writer makes use of the following formulæ in his practice:

℞ Tinct. opii camphorat., f3ij.

Signa: 5 to 15 drops in sugar-water once or twice at night to check cough in a child. To be used only in urgent cases.

℞ Tinct. opii camphorat.,
Vini ipecacuanhæ, āā f3ij.

Dose: 10 to 15 drops. Sedative and expectorant for a child.

℞ Liq. ammon. aromatici, f3ij.

One-half to 5 drops in sugar-water several times a day for children and adults. Expectorant.

℞ Ammonii muriatici, 3ss;
Tinct. opii camphorat., f3j;
Syrupi pruni virginianæ,
Aquæ dest., āā f3j.

Dose: Teaspoonful every three hours for adults to check cough.

℞ Potassii iodidi, 3j;
Tinct. opii camphorat., f3j;
Liq. ammon. aromat., f3ss;
Syrupi tolutani, f3vj;
Aquæ, q. s. ad. f3iv.

Dose: ½ to 1 teaspoonful three to four times a day, as an expectorant for children and adults.

℞ Pulv. camphoræ, gr. ss;
Acidi benzoici, gr. ij.

May be taken in sweetmeats three times a day as expectorant for children.

Terebene and terpin hydrate may be taken for any form of chronic bronchitis as an expectorant; the dose is from two to five drops in syrup or on sugar, and it may be administered by inhalation in all throat affections (two ounces per week). Sedative and expectorant troches are sold in the shops ready made. They are useful in slight ailments.

Inhalations.—The various saline antiseptic and balsamic inhalants in the shape of vapors and sprays are of little value compared with the soothing effects of breathing and living in the pure, fresh, dust-free air of the mountains or seashore.

Inhalation therapy is quite popular among the laity and is a routine method of treatment in sanitaria. In private practice in cases in which a moist atmosphere would probably favor expectoration, moisture may be increased by evaporating water from an open vessel or croup kettle, to which may be added turpentine, the oil of eucalyptus, compound tincture of benzoin, terebene, or creosote, etc.

The upper respiratory tract may be lubricated by means of an inexpensive hand atomizer containing benzoinated petrolatum.

Oxygen inhalations are employed in a routine manner. The author has never observed any marked beneficial effects from oxygen inhalations in hospital or private practice.

SUGGESTIONS ON THE TREATMENT OF DELIRIUM TREMENS.

KELLY draws our attention in the *Cleveland Medical Journal* for November, 1903, to the fact that there is evidently a remarkable difference of opinion among authors who have laid down rules for the treatment of this disorder. For example, Osler and Berkley, on the one hand, state respectively that "alcohol should be withdrawn at once unless the pulse is feeble," and that "alcohol in all forms should be absolutely prohibited from the onset of the treatment unless there is a marked tendency to heart weakness and collapse." On the other hand, the American Text-Book of Surgery says: "The prophylactic treatment consists in the employment of alcoholic stimulants in moderate quantities of capsicum and digitalis, and of nourishing food;" and that "during the attack mild stimulation with liquor or beer is usually advisable."

As regards the statements of Osler and Berkley, it can hardly be gainsaid that in all cases of delirium tremens there is from the very beginning a decided depression of the circulatory system characterized by feeble pulse and other evidences of such depression; and also that unless there is an organic circulatory lesion, the degree of feebleness of pulse and tendency to heart weakness is always in direct ratio to the severity of the disease. The advice in the American Text-Book is, it seems, much more to the point.

It has been observed that the symptoms characterizing what has been termed the first stage have invariably disappeared when alcoholic stimulants were given in sufficient quantity, especially the tremor, fear, and loss of appetite. Ordinarily an ounce of whiskey or brandy with half a pint of water is given every two or three hours, the amount being varied of course in accordance with the severity of the symptoms and gradually decreased. The doses should be large enough to control the symptoms and no larger. When it is learned what amount of alcohol will do this, and the patient begins to eat, diminution should be commenced and continued as rapidly as the condition will permit. The doses can usually be decreased to *nil* in less than a week. If shock from traumatism, or exposure to other cause, is present, more alcohol is required than if this complication were absent. If the culminating phases of the disorder have developed before the patient is seen, the outlook is of course not so good, but alcohol is beneficial if the patient will accept it. If he should not, then other remedies must be relied upon. With the return of appetite and ability to retain food the patient should be given as much light nourishment every two or three hours during the day as he can apparently assimilate. Other remedies of value are warm baths, plenty of light and ventilation, and moderate exercise. The author thinks that nux vomica, capsicum, and the bromides are indicated at times. He has observed no good results in these cases from the use of either chloral or morphine, and is even inclined to regard their use as injurious.

SEVERE PAIN CAUSED BY BLOOD-PRESSURE.

The *Physician and Surgeon* for October, 1903, in an article by INGLIS has this excellent advice to give in regard to certain forms of pain:

There are many cases of intense pain clearly due to temporary increase of arterial pressure, with localized hyperemia. The unbearable headache of intense cerebral congestion, such as occurs at the time of a sunstroke or as a subsequent effect of sunstroke, is an instance in point. A similar congestive headache not infrequently follows severe blows on the head. Many cases of migraine are of the congestive type; such patients often show visibly

swollen, tortuous temporal arteries. Neuralgias in all parts of the body, including those of the internal viscera, are often either due to, or at least accompanied by, such arterial tension. Every medical man knows how these conditions are particularly apt to occur at or near the menstrual period in woman—a time at which arterial turgescence seems to occur in the most diverse parts of the body. Brain tumors exhibit the singular feature that, while the tumor is always present and slowly growing, the frightful headache is intermittent and recurs in paroxysms. These paroxysms must be due to some cause acting in addition to the mere presence of the tumor. That cause seems to be a changing degree of cerebral congestion. Tumor plus congestion, and we have unbearable headaches. The congestion relieved, the pain abates.

Dr. William Browning, of Brooklyn, published an excellent article in the *Journal of Nervous and Mental Disease* on "Relief of Pain in Tumors of the Brain." The following extract gives the gist of the article: "One unquestionable advantage of the use, which the author has so strongly advocated for a number of years, of the vascular agents (whether to increase or depress the blood-pressure) is that they act in an intelligible way and not in some presumed or speculative manner. Their influence can be pretty definitely foretold and its effects controlled; hence the remedy can be fitted to the case. In other words, they are rational remedies and meet the demand for both honesty and exactness in practice."

The method in the present instance is very simple. It consists in the administration of such depressants as aconitine, veratrum, or gelsemium in doses sufficient to soften and control the pulse. The amounts required are not far from those which were recommended in the abortive treatment of apoplexy (*New York Medical Journal*, Feb. 15, 1902). The remedy can be continued as required, though the condition of the circulation should be frequently observed and the amount of the drug regulated according to the necessity of the case and the way it is borne. The dosage in any particular case is kept where it does not dangerously reduce the pulse on the one hand, and yet controls the pain on the other.

This plan may not at any and every instant completely stop pain, but it holds it within bearable limits, and may be all that is required even when the course of the trouble extends over many months. It appears to accomplish quite as much as the method of symptomatic trephining, which was proposed for a similar purpose, and to do this without any of the operative drawbacks.

Doubtless the thoroughness with which pain can be controlled in any given case will depend somewhat upon the manner in which it is produced. Clinically we have, besides those relatively fortunate cases without pain, certain types, and we can trace the source of the pain to at least three factors: (1) There is the local and more or less general increase of intracranial pressure, as occurs most typically in intrasubstantial growths. Where the pain is thus directly due to pressure, it is less intense, but may be more continuous, like a deep ache. In this form marked relief may be expected. (2) Then there is the paroxysmal augmentation of arterial pressure in certain cases, to which reference will be made more fully. It is in these attacks that the terrific pain-seizures occur, and correspondingly this form should be relieved most of all by depressants. It is really here that we most need analgesics, and that opiates fail except to stupefy. (3) But when on the contrary the pain is the result of direct implication or stretching of external structures, as the meninges or outgrowing nerves, and we get instead neuralgias and localized pains, then the good to be realized from depressants may be only proportionate to the degree in which pressure is a factor. And in fact it is supposed that in this last type of cases pain is especially likely to be felt.

It is fair to ask whether this plan has any injurious effect on the course of the trouble itself. Nothing of the sort has been apparent in any case, nor is there any theoretical reason for suspecting harm. So far as one can decide, life has if anything been prolonged. On paralysis, if present, it can hardly have much effect either way.

Browning has in mind the pain of brain tumors, but it is at once evident that the therapeutic application of the idea is a wide one. Congestive neuralgia of the ovaries often is used as reason for their removal. It would save some useful ovaries if arterial depressants were used

more generally. The use of gelsemium or aconitine in trigeminal neuralgia is fairly common, but there are other visceral neuralgias which would seem equally adapted to such treatment.

The trouble is we are afraid of arterial depressants just as we seem frightened to bleed or give emetics. As a matter of fact the heart will stand a tremendous amount of depression safely, provided it be not too suddenly injured. We all know it, yet we give arterial depressants reluctantly. It is a mistake. Browning's suggestion is an excellent one.

LARGE DOSES OF BINIODIDE OF MERCURY IN INFANTILE THERAPEUTICS.

BRETON, of Lyons, in the *Revue Mensuelle des Maladies de l'Enfance* for December, 1903, calls attention to the utility of hypodermic injections of biniodide of mercury in the treatment of hereditary syphilis. He finds that children tolerate large doses of strong solutions of the drug, and he recommends as an ordinary dose .06 at intervals of five to eight days, according to the severity of the specific manifestations. A perfect solution of the mercurial is obtained by adding a small quantity of potassium iodide, and for this purpose Breton recommends a few drops of the following solution: Potassium iodide, 1 gramme; distilled water, 4 grammes. Subcutaneous injections produce very painful swellings which do not disappear for some time, and for this reason intramuscular injections are to be preferred. They are somewhat painful, but do not cause as much discomfort as the subcutaneous injections. Detailed reports of several cases are given.

PROPRIETARY MEDICINES.

A rather interesting communication on this subject is made to the *Lancet* of November 28, 1903, by HUTCHISON.

The author wishes it clearly understood that his analyses make no pretense of perfect accuracy. The analysis of many of the preparations, particularly such as are of vegetable origin, is often a very difficult matter, and it has been found impossible to give quantitative results. The author believes, however, that he has succeeded in representing the active constituents in most, if not all, cases.

APPROXIMATE INGREDIENTS OF VARIOUS PATENT AND PROPRIETARY PREPARATIONS.

Aperient and Liver Pills.

Beecham's Pills: Aloes, ginger, and soap.

Baillie's Pills: Aloes, colocynth, oil of cloves, and soap.

Bile Beans: Cascara, rhubarb, licorice, and oil of peppermint, coated with gelatin.

Cockle's Pills and Barclay's Pills: Aloes, colocynth, and rhubarb.

Carter's Little Liver Pills: Podophyllin (one-eighth grain) and aloes soc. (one-third grain) in each pill.

Dixon's Pills: Taraxacum, podophyllin, jalap, and soap.

Holloway's Pills: Aloes, rhubarb, saffron, Glauber's salts, and pepper.

Page-Woodcock's Wind Pills: Aloes, oleum carui, and soap.

Scott's Pills: Aloin and cascara with a soap basis.

Whelpton's Pills: Rhubarb, aloes, ginger, pulv. ipecac, and soap.

Saline Aperients.

Eno's Fruit Salt: Bicarb. soda, tartaric acd, and citric acid.

Lamplough's Pyretic Saline: Citric acid with bicarbonate of potassium and sodium.

Abbey's Salt: Tartaric acid with bicarbonate of sodium, sulphate of magnesium, and sugar.

Cough Mixtures and Lozenges.

Congreve's Elixir: Benzoic acid, infusion of elderberries, alcohol, and allspice.

Keating's Cough Lozenges: Ipecac, lactucaria, squill, licorice, tragacanth, and sugar.

Owbridge's Lung Tonic: Balsam of tolu, oil of aniseed, and oil of cloves.

Balsam of Aniseed: Contains aniseed and other ingredients with one-tenth of a grain of morphine in every ounce.

Preparations for Gout and Rheumatism.

Eade's Pills: Salicylate of sodium, guaiacum, and aloes.

Gloria Tonic: Colchicum, guaiacum resin, and iodide of sodium.

Blair's Gout Pills: The active ingredient is colchicum.

Preparations for Headache and Neuralgia.

Antikamnia: Bicarb. of sodium, antifebrin, and (?) caffeine.

Bromidia: Bromide of potassium,

chloral, hyoscyamus, cannabis indica, oil of aniseed, syrup, and water.

Hunter's Nervine: Creosote, chloroform, camphor, balsam of tolu, and alcohol.

Kapluine: Antifebrin and sugar (colored).

Kay's Tic Pills: Sulphate of iron, quinine, and soap.

Preparations for Asthma.

Crevoisier's: Belladonna, foxglove, stramonium, sage, and nitrate of potassium in equal parts.

Hair's Cure: Iodide of potassium and tar water.

Plant's Cigarettes: Leaves of stramonium, lobelia, and green tea.

Packer's Cure: Atropine, cocaine, hyponitrous acid, and various balsamic extracts, administered by means of an aeriser.

Remedies for Obesity.

Trilene Tablets: Sugar and a vegetable constituent of unknown nature.

Grey's Specific: Contains 47.2 per cent of free sulphur and a bitter (? gentian).

Mrs. Frost's Anti-Obesity Remedy: The active ingredient is extract of fucus vesiculosus.

Russell's Anti-Corpulent Cure: Citric acid (20 grains to half an ounce), glycerin, and water. The Pink Tablet-Saccharine.

Miscellaneous Preparations.

Buer's Piles Cure: Ointment—gall and hamamelis with lanolin basis. Powder—Precipitated sulphur and carbonate of magnesium.

California Syrup of Figs: Senna (active constituent), syrup of figs, and cinnamon.

Doane's (Backache) Pills: (1) White-coated aperient (dinner pills)—podophyllin, aloin, rhubarb, and peppermint. (2) Brown-coated (Backache Pills)—oil of juniper and a resinous constituent (? benzoin).

Guy's Tonic: Phosphoric acid, tinct. cochineal, infusion of gentian and chloroform water.

Dalby's Carminative: Pulv. rhei, magnes. carb., glycerin, sugar, ol. menth. pip. and ol. anethi, and a small quantity of laudanum.

Chlorodyne: Chloroform, ether, hydrocyanic acid, morphine, cannabis indica, capsicum, peppermint, and treacle.

Clarke's Blood Mixture: The active constituent is iodide of potassium (about six grains to the ounce).

Oxien: Powdered sugar and starch and ol. gaultheriæ.

Ozerine: Bromide of potassium and iodide of ammonia, with chloroform water.

Pink Pills: Sulphate of iron, an alkaline carbonate, and licorice, thickly coated with sugar and colored with carmine.

Phosferine: Quinine, phosphates, and hypophosphites.

Siegert's Syrup: Aloes, capsicum, licorice, and treacle.

Steedman's Teething Powders: Calomel and starch.

Warner's Safe Cure: Nitrate of potassium (about ten grains to the ounce) and various diuretic herbs.

Woodward's Gripe Water: Liquor magnes. carb., ol. anethi, sugar, and a trace of alcohol.

Drink Cures.

Mrs. Terry's: Sugar (98 per cent) and salt (2 per cent).

Antidipso: Chlorate of potash and sugar.

THE ANTISEPTIC AND GERMICIDAL PROPERTIES OF GLYCERIN.

In Bulletin No. 16 of the Hygienic Laboratory at Washington ROSENAU reports his experiments along these lines. He tells us that this study was undertaken and is published on account of its importance from a public health standpoint, particularly in view of the fact that glycerin is used to conserve vaccine virus and analogous products. On account of its bland and non-poisonous properties glycerin has long been used as a preservative for organic matter; but not until 1891, when Copeman claimed for it special virtues as a germicide, did it come into general use to purify vaccine virus.

A false sense of security arose owing to an overestimate of the antiseptic and germicidal value of glycerin. This fact he has brought out in previous publications on the subject of the bacteriological impurities of vaccine virus. Other substances, such as chloroform vapor, chloretone, potassium cyanide, carbolic acid, formalin, etc., have since been used as substitutes for glycerin with more or less success, and it is possible that one of these more energetic germicidal substances may

be found to be superior to glycerin for this particular purpose in commercial practice.

The experiments are published in detail at the request of several vaccine producers, who desire to know the exact value of glycerin as a germicide and antiseptic.

In brief, it may be stated that glycerin has distinct but very feeble germicidal and antiseptic properties. The results are summarized as follows:

Glycerin as an Antiseptic.—Small quantities of glycerin, less than 10 per cent, added to nutrient media have well known powers of favoring the growth and multiplication of many forms of bacteria.

The presence of 50 per cent of glycerin will restrain all bacterial growth. Less than this amount cannot be depended upon for the preservation of vaccines and other organic growths.

The antiseptic power varies for the different glycerins. For instance, some restrain all growth and development when present in the proportion of 43 per cent; others require 49 per cent.

No evident growth or multiplication of bacteria takes place in nutrient media containing 32 per cent of glycerin, but molds grow in stronger percentages, viz., 40 to 49 per cent.

In order to prevent the growth and development of pus cocci at least 33 per cent of glycerin must be present. This is more than that required to restrain the growth and multiplication of the other eighteen different pathogenic and saprophytic bacteria tested.

Glycerin as a Germicide.—Glycerin has a distinct, though exceedingly feeble, germicidal action. It probably acts by virtue of its great affinity for water, abstracting this substance from the germ.

As a rule, glycerin destroys the micrococci of suppuration, whether these be in pure culture or in the pus itself, within two weeks. This action, like that of all germicides, depends for its activity upon the temperature. Pus cocci may live in glycerin for months in the ice chest. They would die in a week at the body temperature.

Glycerin seems to be a selective poison for the bacillus of diphtheria, which in all of the experiments died much more quickly than any of the other organisms tested.

The bacteria of the typhoid and colon group often show a marked resistance to the effects of glycerin in strong proportions.

Glycerin asserts its greatest germicidal effect during the first twenty-four hours. The remaining members of the colonies which resist its action for this period succumb very slowly.

Glycerin in all proportions has practically no effect upon endogenous spores. Anthrax spores have been kept alive and virulent two hundred days in the stronger percentages and at warm temperature.

Tetanus in Glycerin.—Tetanus spores in pure culture, freed of all organic matter and washed free of toxin, may lose their virulence in glycerin in thirty days at the body temperature, but they live for months (one hundred and eighty days) at room temperature or in the ice chest. Glycerin, therefore, cannot be depended upon to purify vaccine or other organic matter containing this contamination. The virulence of the spores is lost long before they actually die, for they still retain the power of growing and multiplying if placed under favorable conditions. Under these circumstances they also regain their original pathogenic properties.

Glycerin has practically no effect upon tetanus toxin. Rosenau found such toxin added to glycerin to be active for sixty days at the body temperature, and one hundred and eighty days at room temperature or in the ice chest.

THE TREATMENT OF SOME ACUTE VISCERAL INFLAMMATIONS.

In a valuable paper contributed by LEES to the *British Medical Journal* of November 28, 1903, he has something to say of the value of cardiac tonics in visceral inflammations. He believes that medicines which assist the heart to maintain the circulation are often of much service in the later days of a pneumonia. It is generally advisable to begin the use of these about the third or fourth day of the disease, and they ought to be given, if at all, somewhat freely.

Of these drugs, strychnine is probably the most useful. It should be given by subcutaneous injection. Half to one minim of the official (British) solution twice daily should be the initial dose for a child; for an adult two minims morning and

evening at first, increasing to five minims if necessary. Even larger or more frequent doses may be given with advantage in influenza with dilatation of the left ventricle.

Atropine by subcutaneous injection is also very serviceable in children, but not so useful for adults because they suffer other unpleasant effects of belladonna. In children large doses of this drug will cause chiefly flushing of the skin, which is of no importance. If the dose be further increased there may be dilatation of the pupil, some mental excitement and restlessness, and in some cases diarrhea. The subcutaneous injection of a very small dose of atropine twice daily, increased to every four hours, is often of the greatest possible service in the cardiac failure of diphtheritic paralysis. The author has used it for many years and is convinced that it has often saved life. But it must be given freely, and one must not be afraid of it. Strychnine may be given with advantage at the same time, but the author is sure the atropine is the more useful. In the paroxysmal dyspnea of mitral stenosis, with rapidly increasing breathlessness, pallor, and sometimes evidence of dilatation of the right auricle, a subcutaneous injection of atropine will often cut short the attack in a few minutes, and in children and adolescents will cause, as a rule, no unpleasant consequences. The same treatment is sometimes effectual in older patients, but in them the after-results of belladonna are much more troublesome.

In the pneumonia of children belladonna has been strongly recommended by Dr. Coutts, and Dr. Eustace Smith has reported an apparently hopeless case of pneumonia in a child in which recovery followed the free use of belladonna, the child being delirious for three days. The tendency of the drug to cause delirium is a great disadvantage in using it for pneumonia, which itself is very prone to cause delirium. On the whole, it is a remedy much more useful for children than for adults.

Oxygen by inhalation assists the aeration of blood in the lungs, and thus improves the quality of the blood supplied to the cardiac muscle. It is therefore truly a cardiac tonic. Its use should be begun as soon as cyanosis is definite, and should be continued for five minutes every hour, whether the patient is awake or asleep. It can be given without disturbing him in the least. Oxygen is certainly a most valuable remedy and ranks with strychnine in the treatment of pneumonia. But neither strychnine nor oxygen, nor both together, will often save life if the right auricle be not relieved. After a bleeding they are powerful remedies; without removal of blood they often fail, and almost necessarily. It is good to maintain the strength of the cardiac muscle; it is still better to diminish its labor. It is best to do both.

Digitalis will not always reduce the frequency of the pulse in pneumonia, especially when the temperature is high. It is most likely to be of service after relief of the right heart, when the fever is moderate and the pulse still remains weak and frequent.

Ammonium carbonate may be given when there is evidence of much secretion in the bronchial tubes.

Alcohol, though called a "stimulant," has not much title to be considered a cardiac tonic. It is essentially a vasomotor depressant, and as such may help the heart indirectly when the tension is high. There is also sometimes a temporary increase in the strength of the pulse after the administration of a moderate dose, probably due to increased blood-supply to the cardiac muscle, through relaxation of coronary arterioles. It is therefore possible that repeated small doses may be of service in pneumonia, but the large doses sometimes advised are likely to do more harm than good. To imagine that brandy can "support" the heart when the right side is becoming paralyzed from overdistention is absurd. In such a case the only satisfactory cardiac tonic is a venesection.

THE TREATMENT OF THE EARLY MANIFESTATIONS OF LARYNGEAL TUBERCULOSIS.

Briggs contributes to the *Journal of the American Medical Association* of December 19, 1903, the following views as to this question: Nourishment is of prime importance, and to this end forced feeding within physiological limits, with moderate open-air exercise and abundance of sunshine, is necessary. The greater part of the twenty-four hours should be spent out-of-doors. Regulated long hours of sleep in a cold, southern-exposed room with

open windows, barring direct draughts, are essential.

The effect of climate is disappointing as directly influencing the local lesion, but indirectly, acting on the general predisposition, is only second in importance to nourishment. The greatest number are benefited by a climate of moderate temperature and of medium hygroscopic conditions, in an elevation from 2000 to 3000 feet. Air free from dust and gases of the cities, purified by moderate winds and rainfall, and an abundance of sunshine, have proved beneficial to many having laryngeal complications in whom the process is either arrested or cured. The warm, moist climate of lower elevations is better suited to a few who are not enervated thereby.

The voice should be completely suspended in the acute form, or during an acute exacerbation of a chronic case. To facilitate this, which is difficult to accomplish, a pencil and pad should be used by the patient, and his necessary communications written thereon, and during the greater part of the day he should be left alone, thus eliminating the temptation of speaking. In the less severe cases modulation of the voice and in the amount of speaking should be insisted on. In no case should singing or reading aloud be permitted. Many patients have a faulty mode of speech specially fatiguing to the larynx. The effect is laryngeal rather than from the chest, and often an affected voice from habit must be contended with.

There is too much routine spraying and inhaling in vogue, throwing into the larynx variously combined oils and liquids, many of which are not only non-solvent but actually coagulating to the secretions, and instead of cleansing and soothing often form a tenacious, irritating mucous coat nauseating to the patient. The principles of treatment are not unlike those in other lines of surgery, cleanliness being the prime factor. If the parts are covered by a tenacious mucus or débris, a bland solvent, such as a solution of sodium bicarbonate, sodium chloride, sodium biborate, or sodium sulphate, should be gargled, sprayed, or applied on a cotton sponge thoroughly but quickly with the least possible irritation to the parts. The patient should not be requested to assist in dislodging retained secretion by repeated coughing or hawking, for the effort is too fatiguing for an organ needing rest, and induces hyperemia. After the cleansing process, the inflammatory conditions should receive such treatment as is indicated, and usually astringents, solutions of zinc chloride, tannate of glycerin, creosote and iodine, pyoktannin and silver nitrate on a cotton swab are most efficient.

Any pathological condition of the nose and pharynx should receive appropriate treatment; not only that the pulmonary patient may be able to supply his lungs plentifully with air, but that the larynx may be the recipient of air properly warmed, filtered, and moistened, every nasal and pharyngeal stenosis should be reduced, and to this end no moderate degree of cachexia will contraindicate the removal of septal spurs, or deflections, hypertrophied turbinates and adenoids, for the increased oxygenation will more than compensate for any debilitation resulting therefrom. Such measures are to an extent prophylactic to tubercular laryngitis.

There is much diversity of opinion as to the indications for local treatment of the preulcerative conditions. Theoretically, stimulants to the anemic and sedatives and astringents to the hyperemic areas are indicated, and the author's clinical experience conforms to this. Where there is a general anemic condition of the larynx and a beginning tumefaction, a stimulating spray of 20-per-cent menthol in liquid vaselin, or 50-per-cent guaiacol in olive oil, will tend to restore the capillary circulation. Propelling sprays with hot instead of cold air adds to their efficiency.

As the tumefaction advances an application of iodine, creosote, and potassium iodide in glycerin and water often has an absorptive action. The erosions and incipient ulcerations respond better to strong solutions of lactic acid than to any other application. Creosote 20 per cent in albolene, pyoktannin, and iodoform powder are also effective. It is needless to say that the mirror should guide the hand in all applications.

Intralaryngeal injections often serve well for both the general dyscrasia and local lesions.

Submucous injections have not in the author's experience proven satisfactory. The method of scarifying the tumefaction is it is believed contraindicated. In certain selected cases where the infiltration

is localized and accessible, especially in the so-called primary cases, thorough curettement followed by carbolic acid or lactic acid is permissible.

THE TREATMENT OF SOME DISEASES OF THE EYE BY WARM MEDICATED SPRAYS.

To the *Medical News* of December 26, 1903, MARSHALL contributes a paper with this title. For the past year he has made use of an old but seemingly little known method of treating certain diseases of the eye, namely, the use of warm medicated sprays applied by means of a steam atomizer.

The method is simply this: A steam atomizer, such as is commonly used in spraying the throat, is filled with water, the alcohol lamp is lighted, and a solution of the remedy indicated is put in the cup. The patient is seated in front of and close up to the atomizer, at such a level that his eye looks directly into the tube. When the spray is well started the lower eyelid is pulled down, and the patient is directed to hold his eye wide open. The spray is directed alternately into one eye and then into the other, the duration of the treatment being from five to ten minutes. After spraying, the eye may be touched with bluestone or alum stick, or applications of drops or ointment may be made, as is indicated. These agents seem to act more effectively when applied immediately after the warm spray.

Cases of blepharitis marginalis heal with surprising rapidity after a course of spraying and yellow oxide or other ointment. As this disease is often complicated with, if not really caused by, a conjunctivitis more or less chronic and often trachomatous, it gets well because the conjunctivitis is healed at the same time. In practice it is very difficult to get blepharitis patients to remove the crusts from their eyelids. Unless this is done ointments do not act effectively. The hot spray softens the crusts, and they may be removed while the spray is being applied. In this connection the blepharitis cases often do better with ointments other than the classic yellow oxide. The author has obtained good results with Lassar's paste, boric acid ointment, and even plain vaselin after yellow oxide in one-half- to one-per-cent strength had been used for weeks, to no purpose. It is idle to scold the parents of the average clinic child because they fail to remove the crusts from their child's eyes. It is better to make use of a treatment which will cure the child's eyes in spite of the ignorance or carelessness of its parents.

Chronic conjunctivitis responds most satisfactorily to treatment with the warm spray. The spray is soothing and pleasant, and patients enjoy taking it. Most cases of conjunctivitis do well under bluestone applied immediately after the spray. The author applies it lightly to the lower lid, and then lets the patient bathe the eyes in a basin of cold water until the acute pain is somewhat abated.

Of all cases in which he has used the spray treatment, the most satisfactory have been some chronic cases of conjunctivitis and pannus, combined with more or less corneal infiltration due to old trachoma. We see many such in the dispensaries in New York. They are found principally among the poorer classes of Russian Jews, many of whom are tailors and work in poorly lighted and poorly ventilated sweat-shops. The plight of these people is sometimes pitiful in the extreme. They are compelled through poverty to work when their eyes are totally unfit to use. Some of them give a history of having had trachoma, with occasional attacks of pannus, for periods varying from five to thirty years.

Where the corneal irritation is due to the rubbing of roughened cicatricial surfaces of the eyelids, little can be done. In cases where the conjunctiva of the eyelids is swollent and succulent, the spray treatment, followed by applications of bluestone, is very effective. The author has relieved a number of such cases which had been treated with bluestone or nitrate of silver for months with no improvement.

Corneal ulcers and infiltrates often clean up rapidly under the spray treatment.

A method of treating chancroids by means of a weak spray of peroxide of hydrogen, applied by means of air at a pressure of 60 pounds to the square inch, has recently been suggested. The author believes a warm spray of a suitable solution applied with considerable pressure would favorably influence a corneal ulcer, but he has never tried it.

The pressure of the warm spray as it issues from the tube of the atomizer is practically inappreciable, but it cleans out an ulcer effectively.

Marshall concludes that spraying with warm medicated sprays is indicated in almost all diseases of the conjunctiva, as acute catarrhal, chronic, epidemic, gonorrheal, trachomatous, and phlyctenular conjunctivitis; in diseases of the cornea, as ulcer; in infiltration and interstitial keratitis; and in iritis.

HAMMER-FINGER.

A somewhat remarkable occurrence of hammer-finger in seven members of one family is a sufficient example, remarks SCOTT (*Glasgow Medical Journal,* November, 1903), of the marked hereditary tendency of the deformity. It is probable that in many cases of this affection the hereditary history cannot be obtained simply because the condition has attracted so little attention.

Among some of the peculiar features of this series are: (1) the probability that the deformity was actively brought out by the intermarriage of cousins; (2) in all cases the youngest member of the family has a hammer-finger; (3) the constancy with which the first interphalangeal joint of the fifth digit is affected.

Recognition of the affection at an early stage might save the necessity of surgical interference, which for so trifling an affection is difficult and complicated.

In one of the cases described the treatment of the affection in its early stage consisted of the patient practicing forcible extension of the affected fingers rapidly and wearing a splint at night. The splint is made of light, strong metal covered with leather. Its shape fits the palm accurately, the divisions corresponding to the affected fingers. It is firmly fixed at the wrist by a strap. By bandaging the contracted fingers to the metal prolongations, they are spread as much as possible. Such treatment persevered in should at least arrest the development of the contraction.

Surgical treatment, which differs from similar treatment for hammer-toe, may consist of section of the lateral ligament, with a subsequent lengthening of the tendon. This treatment, however, neglects the deformity of the bone, and where there is much rotation forward of the articular surface the bones can only be brought into line at the expense of a partial dislocation. This bony deformity could be rectified by performing an osteotomy. This operation should be performed as near the articular surfaces of the head of the first phalanx as possible, there being no epiphysis at this end to complicate matters. The osteotomy and section of the ligament could be done at one operation. The finger could then be fully extended on a splint, the hand being flexed at the wrist to relax the flexor tendon. A second operation would probably be necessary to lengthen the tendon.

The operation is not to be undertaken lightly, because of the complicated nature of the deformity and the danger of producing ankylosis when working so near a joint.

KNEE-JOINT SUPPURATIONS OF AN ACUTE FORM—MODERN TREATMENT.

Where the knee-joint is distended, exhibiting intensely septic general symptoms of growing severity—even to the so-called typhoid status—and at the same time the local disability, tenderness to touch, the exquisite pain, and the edema of the integument all point to a destructive process, the presence or absence of pus should be immediately determined with the aspirating needle. Errors in diagnosing such cases as acute suppurations of the joint may be made, though such are rare in pyemic or in traumatic cases. Of errors that have come under GERSTER's observation (*Medical News,* Sept. 19, 1903), that of acute articular rheumatism was the most frequent, then followed cerebrospinal meningitis, and finally typhoid fever.

A careful and systematic going over of the body of the patient, especially when he is more or less comatose, will soon establish the presence of the characteristic pale and deep-seated edema of the lower end of the femur or of the upper end of the tibia. Pressure over the epiphyseal line will not fail to elicit signs of distress, even in a deeply comatose patient, and the surgeon, if his diagnosis be made early, will at this stage find no abnormality about the joint.

The acute purulent inflammations of the knee-joint are divided by Gerster into three groups—*i.e.*, metastatic or pyemic suppurations, suppurations due to osteomyelitis, and traumatic suppurations.

If the local symptoms of the first group are troublesome they will demand surgical intervention: first, evacuation by puncture, and if the collection be ropy and thick, by irrigation. Rapid reaccumulation will demand incision and drainage, the number of incisions depending upon the acuteness of the local symptoms. In mild cases two lateral incisions, placed along the sides of the patella, and a median incision penetrating the quadriceps bursa, will be found sufficient. A rubber tube is placed in each one, and the dressed limb is fixed on a suitable splint, preferably in horizontal suspension. Daily change of dressings and irrigations follow. As soon as the secretions become serous the tubes ought to be withdrawn.

In small children one or at most two incisions will suffice. Here the use of carbolic solutions is strictly prohibited.

Of the most troublesome forms of metastatic infection, due to gonorrhea, only those will require active interference in which massive effusion and great tension threaten the integrity of the joint. While the course of the malady is very slow and rebellious, in the majority of cases the function is restored.

As suppuration of the knee-joint springs sometimes from osteomyelitis, in every case of this latter attacking the tibia or femur near the knee the joint should be watched. An effusion distending it should not be overlooked. The edema of the integument, however, should not be mistaken for an effusion. Flexion and rigidity of the joint, being regular companions of osteomyelitis, have also an inferior diagnostic significance.

Every osteomyelitic focus should be freely opened as soon as the diagnosis is made. A free external incision will expose the bone; the chisel and mallet will lay open the diseased medulla and cancellous tissue. Thus, in favorable cases, the extension of the infection to the articular cartilage may be averted. But where the joint has been attainted the focus should be followed up and traced to where it perforated the cartilage. To this should be added at once arthrotomy.

Mayo's incision is found advantageous. The joint having been widely opened along three-quarters of its circumference, direct access to all the ligaments becomes easy, especially if the crucial ligaments be also divided. Each of the sinuosities of the capsule can then be inspected and subjected to direct local treatment by packing. To do this thoroughly, the knee is flexed at an angle of 45 degrees, and after proper packing is dressed in that position. Even if only temporarily employed this treatment affords great advantage over irrigation.

Ordinarily the local and general septic symptoms rapidly subside, and within a week or ten days the flexed joint can be again extended, in which position it is permitted to heal. Where most or all of the articular cartilage was preserved, even a certain degree of the function of the joint may be regained. Extensive loss of the cartilages, however, must end in firm ankylosis.

Traumatic infection of the knee-joint even under the most favorable conditions of general health is a terrible enemy. The benefits to be derived from employing Mayo's incision in such cases depend almost wholly upon the condition of the patients.

HIP DISEASE—A STUDY OF GOOD RESULTS.

A good result in hip disease is, from the practitioner's point of view, arrest or termination of the disease, regardless, says GIBNEY (*Medical News,* Sept. 19, 1903), of the position in which the limb is left.

Ankylosis is rather courted, and if a stable, firm union is secured, it is believed that the patient will be free from any late exacerbations, and locomotion will not be seriously impaired. The claim is often made, too, that a cure with a flexion deformity enables one to sit more comfortably and to dress oneself with more ease than if the ankylosis existed without deformity. This depends upon the point of view. For one whose vocation is to be sedentary there is no question but that an angle of, say, 135 to 150 degrees fixation is better. Where, however, the vocation of the patient takes him out-of-doors, the position should be straight—that is, ankylosis, if it must exist, without either flexion or adduction deformity.

As the patient approaches puberty, how-

ever, he is sometimes dissatisfied with the existing deformity and seeks relief at the hands of the general surgeon. An osteotomy, either simple or cuneiform, is done, and the limb is placed in what is honestly believed to be a good position—that is, straight with the axis of the body. Disappointment comes on removing the appliance employed, for the deformity has not been fully corrected. But this is much the best result one could expect.

An orthopedic surgeon whom the lay press has placed at the pinnacle has claimed that ankylosis without deformity is the best we can expect. Plaster-of-Paris is used to allay irritation and encourage ankylosis.

Surgeons who claim that early excision yields good results are not able to furnish the proof. If the disease on section is found extensive, too much of the bony tissue must be sacrificed, and not infrequently a flail joint is the result. Early excision is not popular in this country because of the mortality and of unstable limbs.

Among orthopedic surgeons whose practice is not confined to splints, there is a growing tendency to remove by small aseptic operations the foci of disease demonstrated by the radiograph. Some find it advantageous to evacuate small collections of pus by means of the scalpel when the needle will not suffice. All of these operations, however, should be followed by protection apparatus. It has been abundantly proved that the best results are obtained by the early use of splints that immobilize the joint. Such appliances, to be efficient, must be long continued, irrespective of muscular atrophy. Among the best informed of orthopedic surgeons the results obtained over a quarter of a century ago by the late Charles Fayette Taylor have not been surpassed, and this pioneer claimed that muscular atrophy was a thing to be courted.

The good results acceptable to many surgeons are the minimum amount of shortening, without deformity, and with the maximum range of motion.

Results must be studied on a basis of the stage in which well recognized methods of treatment are begun. The keen diagnostician will recognize the lesion before the deformity arises and at an early stage, while the poor diagnostician will fail to recognize hip disease until the mother of the child has already made the diagnosis herself. Then the second stage, that of deformity, will have been reached and the advantages of early protection are lost.

The tardy recognition of the value of instruction in orthopedic surgery by the medical schools throughout the country is largely responsible for the destruction of hip-joints and the hopelessness of restoring function to joints thus impaired.

Where treatment is delayed until the bacilli have already played sad havoc with the head and neck of the femur, fair results may be obtained by close attention to details and by intelligent home coöperation. Here one must be posted on the damage to tissue an abscess can cause, and steps will naturally be taken to curb its virility. Occasionally a fine result can be secured, but this can hardly be expected.

In the third stage content must be had with correcting deformity and eradicating necrotic areas and sinuses. Results that will satisfy can be secured by maintaining the best position of the limb. There should be no hesitation to repeat efforts at correction, or resting satisfied until the maximum benefit has been secured as a lasting result.

STOMACH AND GUT OPERATIONS—MURPHY BUTTON.

From a critical review of all recent literature on the subject, NEUWEILER (quoted in *Medical News,* Sept. 19, 1903) has prepared a list of the more important conclusions concerning the employment of the Murphy button in stomach and gut operations.

Perforation resulting from the use of the button is particularly prone to occur after union of the small gut following resection for incarcerated hernia, in certain gastroenterostomies, and particularly after circular iliocolostomies. In many cases the blame for the perforation lies in faulty technique or in the use of worthless buttons. In hernia the cause of perforation lies more in the already existing infection than either in bad technique or faulty button, shown by the fact that union by suture yields no better result. This is, therefore, no just arraignment of the button principle.

Before using a button the following conditions should be fulfilled: (1) The margins of the ring which are designed to hold together the serous surfaces on the male side and all marginal holes must not be sharp but evenly rounded off; (2) the opening between the cylinder and ring of the female side must be wide enough to admit a thick gut wall; (3) the cylinder of the female part must be somewhat shorter than that of the male, or that a complete locking of the two parts may be possible; (4) the male cylinder, when the button is closely pressed together, should not overreach, lest with the fingers closely pressed over the openings its margin may seriously wound the mucous membrane of the gut; (5) the strength of the spring must be such that the pressure will be absolutely continuous so that necrosis will occur early; (6) the size of the button must be in proper relation to the size of the gut.

Touching on the technique of inserting the button, the purse-string suture should not be placed too far from the edges of the gut lest a cuff result too large to be accommodated by the button. Similarly this stitch shall not be placed too near the edge for fear of tearing out when the button is pressed together. Two or three millimeters from the edge seems the best average distance. In circular anastomoses care must always be taken that the stitch holds the mesentery close to the button, so that at this point only serous surfaces shall be brought together. Protruding mucous membrane should always be resected. The closure of the button should not be accomplished by a single push, but by several. The fingers should be so placed as not to wound the mucous membrane upon the margins of the lumen. In most cases a protecting reënforcing line of suture should be used.

TRIFACIAL NEURALGIA—SURGICAL TREATMENT.

In the operative treatment followed by BARONI (quoted in *Medical News,* Sept. 19, 1903), for trifacial neuralgia, a larger portion of the trigeminal nerve is removed than could be accomplished by simple resection, for not only is that part accessible which is uncovered by the incision, but an additional portion is drawn out by the movements of traction, and the section occurs near the ganglion. The beneficial effect of nerve stretching, furthermore, is attained by the same means through which the section is accomplished and simultaneously.

The nerve is exposed for as great a length as possible, and isolated. It is then seized with pincers at the angle of the wound in the soft parts corresponding to the center of the nerve, and gentle traction is exerted upon it. The nerve is seen gradually to be stretched and drawn outward. Again it is seized with the pincers near the angle of the wound, and more energetic traction causes it to be severed some distance from the point at which it is held by the forceps. This same maneuver is repeated at the opposite angle of the wound, toward the peripheral portion of the nerve.

ANASTOMOSIS—INTESTINAL ANASTOMOSIS BY THE ELASTIC LIGATURE.

A combination of the usual methods of anastomosis is offered by MCGRAW (*American Gynecology,* September, 1903) in the belief that it affords the best chance for the patient with gangrenous intestine.

The gangrenous coil is drawn out of the abdomen far enough to permit the surgeon to unite the two ends of the bowel at a point where they seem healthy, by means of a rubber ligature. This requires very little time, and causes no shock. All of that part which is likely to slough is then fastened outside the abdomen, and the wound is closed around it. The immediate result is an artificial anus through which the intestine may relieve itself of its contents.

At the end of two or three days a new channel has been cut by the rubber ligature, and the false anus then becomes unnecessary. It may then in time close spontaneously, or be closed by the simple operation of inverting and suturing the ends. In this way may be escaped both the great danger of an immediate excision and an end-to-end anastomosis and the severe secondary operation for the cure of an active false anus.

The details of operation are simple enough. The two viscera are brought together, and the surgeon connects them with a single line of Lembert sutures a little longer than the desired opening. The rubber cord is then, by means of a large

needle, passed through the walls of first one and then the other bowel and tied firmly in a single knot. Before tying it, however, a silk thread is laid under the knot, and after the knot has been firmly tied with the rubber stretched to its utmost, the silk thread is made to fasten it in place. Both threads are then cut short, and the Lembert suture is now completed so as to form a ring enclosing the rubber. In passing the rubber through the gut it should be put upon the stretch in order to lessen the size, and should be drawn carefully and slowly through in order not to tear the gut. It is not necessary to say that the rubber should be first-class and fresh, for old rubber is likely to break.

Besides simplicity and quickness of application, this procedure possesses aseptic quality, for the rubber fills the openings through which it passes so completely that no extravasation is possible. Another advantage is the delay in opening the passage until the intestines have become well glued together. Not the least of the good points is the ability to make with this procedure a communication of any desired length. In the hands of the experienced surgeon it may be looked upon as the least dangerous of all methods for making an intestinal anastomosis.

NEEDLES EXTRACTED WITH A GIANT MAGNET.

The successful use of a giant magnet in two cases in each of which careful dissection had failed to locate or remove the fragment of a needle is indicative, report WETHERILL and POWELL (*American Journal of Surgery and Gynecology,* October, 1903), of a new use to which the instrument may be applied. The simplicity and safety of the operation commend a trial of the magnet if it is available.

The magnet employed by the reporters was made for removing pieces of steel from the eye. The core is four inches in diameter, of solid forged Norway iron, and weighs 108 pounds. The coil is ten inches in diameter. The rheostat is controlled by means of the operator's foot. The direct current of 220 volts is taken from the motor wires of an electric light company.

The instrument exerts an attraction of 150 pounds for each square inch of contact, so that care must be exercised in wearing watches near the magnet.

In one case where the instrument was applied to remove the remainder of a pin lying at a depth of about three-quarters of an inch below the surface of the sole of a left foot, while the current was gradually increasing the foot was moved slightly in different directions in front of the instrument to try to start one end of the pin. After forty-five minutes' exposure and with a current of 220 volts a slight bulging of the skin was noticed just behind and below the internal malleolus. A small incision was made through the skin at this point under cocaine anesthesia, and the magnet was again applied. At once the pin was drawn out through the incision and held by the magnet.

BRIGHT'S DISEASE—SURGICAL TREATMENT.

The success, more or less great, which has attended the newer treatment of what was formerly looked upon as a purely medicinal affection has caused GORDON (*Annals of Gynecology and Pediatry,* November, 1903) to invite attention to some important points in the treatment of the disease.

Bright's disease is primarily an acute inflammation of the kidney structure, not dependent upon any specific infecting germ, which if early recognized and properly treated will terminate by resolution. Repeated attacks may occur if the condition is neglected or not recognized. Each one of these assaults leaves products of the inflammatory process, and these may organize or even suppurate. The circulation is thus interfered with, and there is produced finally a chronic passive congestion incorrectly called "chronic inflammation." The chief result is an enlargement of the organs, causing pressure of the fibrous capsule. Complete decapsulation relieves this. The distended vessels are depleted by more or less bleeding, while the circulation resumes its normal condition and absorbs the exudate.

One kidney alone may be involved, and operation upon that one alone may cause the symptoms to disappear.

As to cases far advanced, the surgeon is justified in operating when the suffering is great simply for the pleasant relief to the patient.

CANCER—CANCROIN TREATMENT.

Cancer treated by injections of cancroin, concludes ADAMKIEWICZ (quoted in *Medical Record*, Oct. 3, 1903), enables the patient to live longer and in greater comfort, even when not "cured," than those who are given over to their fate without treatment.

The action of cancroin takes place in the reverse order in which the damage is done by the disease. This inroad upon the system is threefold, local-anatomical, local-functional, and general. The injection fulfils its special task if it hinders the injurious influence of the cancer products upon function and the general condition of the patient. The elimination of the dead cancer and its replacement by formative tissue is exclusively a question for the reparative powers of the organism. It is consequently not reasonable always to demand such "cure."

One of the cases treated was a fungoid cancer in a male of fifty-two, about the size of a dollar, on the right side of the soft palate. Injections first of all relieved the pains. The growth then became metamorphosed into white fat, the lower jaw next became movable, and toward the end of the second week the patient showed how he could introduce a finger between the teeth and eat solid food. About four weeks after beginning the injections nothing was left of the tumor but a clean, granulating ulcer, which healed completely in about three more weeks. In a case of cancer of the tongue that organ regained somewhat its motility, the infiltration present decreased markedly, and a tumor behind the ear softened so much as to permit of the evacuation of its contents by successive punctures. Stomach induration, in another case, cancer of stomach and liver, vanished, except one walnut-sized hard spot on the greater curvature. The liver decreased considerably in volume and retained an uneven surface. Appetite was regained, and the patient renewed his weight. The day after the first injection in the case of a woman of fifty-two, who waited for death because of apparently incurable cancer of the intestines, the tumor became smaller and the pain less. After a few days she dressed, ate, and aided by simple remedies, defecated. At the end of the second week the stools came naturally and had a normal appearance. In a few weeks more she was able to go out-of-doors and to perform ordinary household work.

The author has repeatedly observed the vanishing of cancerous infiltrations and tuberosities of the liver, and the consequent reduction in a short time of the increased volume acquired through the disease.

THE VALUE OF PERISTALSIS AS SHOWN BY AUSCULTATION IN THE DIAGNOSIS OF INTRA-ABDOMINAL AFFECTIONS.

As the result of a clinical and experimental research on this question, GAUB (*Pennsylvania Medical Journal*, September, 1903) notes that the absence of a peristaltic sound after trauma is not of sufficient value to determine a celiotomy, but that if all means have been instituted to combat shock, and the pulse-rate is rapid and of normal volume, and the peristaltic movements are absent, at the end of four hours exploratory celiotomy is justifiable.

The author concludes with the statement that any injury to the abdomen sufficient to abolish peristalsis is a grave one.

FLATFOOT—TREATMENT.

Acquired flatfoot, it is noted by MACFARLANE (*Pennsylvania Medical Journal*, September, 1903) is essentially and distinctly due to faulty shoes, and is the accompaniment of certain occupations incidental to modern civilization. Exceptions to this rule are made, however, in the case of injury and of anterior poliomyelitis.

He notes as symptoms, pain and deformity, venous congestion with perspiration, a shambling gait, eversion of the foot, and often the condition of knock-knee.

The diagnosis in cases attended with little deformity but severe pain may be difficult.

A very excellent means of recording the flattening lies in painting the sole of the foot with tincture of chloride of iron, and then directing the patient to stand upon a surface covered with white paper. If the print thus formed be dusted with tannic acid, a permanent picture is obtained for future reference.

The prognosis, unless in paralytic cases of cerebrospinal origin, is most satisfactory. At the outset a well constructed shoe elevated but the fraction of an inch on the inside, with a broad heel and a good counter, will enable the patient to be about with comfort. If this be supplemented by frequent bathing, massage, and simple exercises, a cure will result.

So-called weak knees of children are really a condition of valgus or flatfoot, often due to the children being taught to walk before they can creep. Thus it is not uncommon to see huge, fat children hanging on to a chair with both ankles turned in, and their shoes worn on the inside alone. The ankle-supporters made of stiff, pressed leather, and the use of a last shoe instead of the ordinary buttoned ones, together with routine treatment, will relieve most of these cases. In paralytic cases braces extending beyond the knee will usually be necessary.

When the foot can be carried into the normal position, but falls back when the returning force is removed, tenotomies followed by retention apparatus to hold the foot in an overcorrected position will be required. All exercises tending to place the foot in the condition of varus rather than that of valgus, if practiced in moderation, are desirable.

Raising the weight of the body on the toes, then turning the heels out and allowing the foot to fall to the floor in that position, is an excellent form of gymnastic exercise.

SWALLOWING—DIFFICULTIES IN SWALLOWING.

For the purpose chiefly of casting more light upon its diagnosis and treatment, BUTLIN (*Clinical Journal,* Oct. 21, 1903) outlines his experience in chronic dysphagia.

Chronic dysphagia, up to the age of eighteen or twenty, is very rare, and if it is met with at all it is generally due to some very unusual cause. A rare case in this class was that of a boy, aged eleven to twelve, who had never been able to swallow solid food. No results came from the ordinary examination, hence the esophageal bougie was passed under an anesthetic. About the middle of the esophagus it seemed to encounter some very slight hindrance, which was overcome by a slight pressure. Before the patient had thoroughly recovered from the anesthetic he swallowed a lump of bread without difficulty. As soon as he regained his senses, however, he could not be persuaded to swallow anything, though he was probably well able to swallow. In a second case, that of a girl of fifteen years of age, similar to the first, passage of the bougie broke down, it is believed, a congenital web. The child was then able to take solid food and gained flesh with great rapidity.

If chronic difficulty in swallowing should arise in patients of from twenty to forty years of age, malignant and tubercular disease, particularly about the arytenoid region and interarytenoid fold, aryepiglottic region and cricoid plate, may be suspected.

After the age of forty difficulty in swallowing, chronic dysphagia, becomes very much more frequent. The most common cause of it is malignant disease of the esophagus.

Men are more liable to a chronic difficulty in swallowing than women are. In men the cause of the difficulty is most frequently malignant disease. While it may be the same in women, it may be due in young women especially to nervous difficulty.

As to the ability of these patients to take various kinds of food in cases of disease about the cricoid plate, fluids are likely to produce spasm, with all that choking and distress which occurs when food passes the wrong way, so that soft solid food, such as jelly and blanc-mange, is often swallowed better than liquids or fluids.

As a patient may be mistaken not only as to the level of organic disease, but even as to the side on which it lies, it may be well for the practitioner to look for the seat of the stricture at a point lower than is pointed out, except in connection with disease at the back of the larynx, in which case patients are generally right as to the seat of the stricture. Patients with malignant disease at the cardiac orifice of the stomach often believe the seat of the stricture to be much higher up.

The patient may have dysphagia without odynphagia, and he may have pain without much difficulty in swallowing. Non-malignant strictures of the esophagus do not as a rule give rise to pain in swal-

lowing. Even malignant strictures of the esophagus, unless very high placed, may exist for months or more than a year, and yet never at any time cause the slightest pain in swallowing. On the other hand, a spasmodic stricture sometimes causes very great pain. The experience of pain of cramp in the leg suggests what the pain of spasm of the muscular coat of the esophagus may be; which probably accounts for the extreme pain from which some of these patients suffer.

Difficulty in swallowing may often be due to external trouble. There may be enlarged glands or a tumor of the thyroid gland, particularly malignant disease of the gland, which presses upon the esophagus and causes difficulty in swallowing. There may be an aneurism of the aorta, and for a long time it may be very doubtful what the difficulty in swallowing depends upon.

Before the passage of an esophageal bougie it is of the greatest importance in a case of chronic difficulty in swallowing to examine every part both from the inside and the outside. The outside of the throat and neck should be examined first, also the chest, to be sure that there is no palpable tumor or undue fulness of the veins. The posterior triangle of each side is given particular examination. Here the presence of small shotty glands may indicate malignant disease very much lower down. The interior of the mouth is examined, every part of it, from the opening of the mouth down to the larynx. The interior of the larynx is examined with the laryngoscope; disease is looked for on either side of the throat above the larynx; whether there is swelling or ulceration of the epiglottis or posterior part of the larynx. The greatest care is taken to be sure that the vocal cords move readily. Paralysis of one vocal cord means either malignant disease of the esophagus or an aneurism of the aorta. Paralysis or paresis of both vocal cords may mean disease of the central nervous system. Questions are asked concerning the presence or absence of a spasmodic cough, difficulty in breathing or vertigo, and expectoration and its character. The voice of the patient is examined as to its character and quality. Indications of disease of the nervous system are looked for, particularly of bulbar disease.

The surgeon should be cautious about passing a bougie in a supposed stricture of the esophagus. The stricture may be due to the presence of an aneurism of the aorta, and if the aneurism is making its way into and threatening to open into the esophagus, the thin wall will be ruptured and the patient die.

If there is doubt whether an esophageal obstruction is due to the presence of organic disease, the patient should be persuaded to allow the bougie to be passed under an anesthetic. In some cases, however, a large bougie can be passed into the stomach under an anesthetic, notwithstanding that there is present dysphagia and even malignant disease of the esophagus.

There are patients who do not present the usual symptoms of malignant disease of the esophagus, and in whom a bougie can be passed with ease into the stomach, who nevertheless die from malignant disease. There are other patients who present the most marked symptoms of cancer of the esophagus and are condemned to die by the specialist they have consulted, but who, nevertheless, mend and completely recover.

In some doubtful cases the esophagoscope may be of some help, but in every case of chronic dysphagia in which the practitioner can neither see nor feel the disease there should be great caution before coming to any conclusion concerning the cause and future of the case.

ACNE VULGARIS—ROENTGEN-RAY TREATMENT.

Torok and Shein (*Wiener klinische Rundschau,* Sept. 13, 1903) have employed Roentgen rays in the treatment of acne vulgaris which resisted all other forms of treatment. The *x*-rays acted very favorably in every case, caused absorption of recent papules, and crusting over and disappearance of pustules. The best results were obtained after fairly strong cutaneous reaction took place, as indicated by marked hyperemia and desquamation. The first effect of treatment was to aggravate the condition. An improvement was observed only after the reaction subsided. Several applications of the rays were necessary to produce a

cure. The acne lesions showed a tendency to increase in the cutaneous areas surrounding the region treated unless they were protected from the rays. The areas treated have remained free from recurrence for months, although new groups of lesions have appeared in the untreated areas.

IDIOPATHIC DILATATION OF THE COLON.

While chronic dilatation of the colon is a condition not uncommonly met with in adult life, MURRAY (*Annals of Surgery,* November, 1903) quotes a case of a somewhat unusual character, in that instead of being due to some definite mechanical obstruction, such as stricture of the gut or fecal infection, dilatation of the colon in the young child was due to the rectum being considerably distended and to the anus being unusually patulous.

The boy had suffered from constipation and abdominal distention since birth, four years ago, and constantly required aperients or enemata. Various lines of treatment were followed at various times because of varied diagnosis. He was operated upon twice. The second time the abdomen was opened below the umbilicus and the operator came in contact with an enormously distended something which filled the greater part of the abdominal cavity. On further enlargement of the incision this large something was delivered, apparently containing air, and was found later to be a dilated colon. When it was emptied of its gas and fluid feces, it was easily and clearly seen that the whole of the large bowel was distended from the cæcum to the anus, but that the part chiefly involved was the sigmoid flexure and the descending colon. The bowel measured here six inches in diameter when distended and four inches when emptied. The emptied bowel was easily returned into the abdomen, which was now flat. Because of the child's condition further operation was postponed. After considering various procedures it was deemed best to completely incise that portion of the bowel corresponding to the sigmoid flexure and descending colon, and to attach the transverse colon to the upper part of the rectum, end to end, by means of simple suture.

The child made an exceptionally good recovery. He is greatly improved in health since the operation, and does not suffer from constipation or from any abdominal distention.

In diagnosing these cases proper attention should be paid to the previous history of the patient, and to certain clinical symptoms characteristic of the affection. In this case there were repeated and serious attacks of constipation and distention, lasting on and off for five weeks. There was suffered occasional attacks of diarrhea. Since the child was eighteen months of age the abdomen was always distended; on one occasion there was no action of the bowels for thirteen days.

On first observation the case was thought to be tuberculous peritonitis.

AMPUTATING—TECHNIQUE IN THE PRESENCE OF SUPPURATION, GANGRENE, OR MORTIFICATION.

The formation of special flaps may be ignored and other advantages be gained, according to MANLEY (*Cincinnati Lancet-Clinic,* Oct. 31, 1903), if a few cardinal principles are observed in the performance of amputations for injuries.

In most cases it is of the greatest importance to guard well against the loss of blood. In the presence, however, of inflammation moderate vascular depletion is of signal value. In fresh cases, as far as circumstances will permit, rigorous asepsis should be observed, the dressings and the instruments being sterilized, but the pouring of boiling water on the nude tissues is a most prolific cause of sensitive stumps and osteomyelitis with necrosis.

In sloughing, infected suppurating, or gangrenous cases, antiseptic solutions for irrigating and saturating the dressings are of great value, but they must not be of too concentrated strength, especially if the bichloride of mercury is employed, as this is so likely to provoke an insidious but destructive form of inflammation in the bone elements of the stump. Anything beyond one to ten thousand is too strong.

Manley places reliance on the oldest antiseptic solution, carbolic acid, because it acts as a deodorizer and a sedative to the wound.

As to drainage, a free vent for the secretions must be provided in all cases.

Enough bone must be removed to provide a proper covering. Periosteal flaps are found to be of little or no advantage. It is generally advised to draw the large nerve trunks well down and to divide them high up. The ends are then carefully covered in by suturing the sheaths over them.

Everything considered, the muscular flap is found to be the most satisfactory. In amputations in continuity the circular flap is the most useful and forms the best stump.

In primo-secondary amputations any specially shaped flap may be ignored, the only object being to comfortably clothe the end of the bone with integument, or cicatrix and integument together. It may be discovered in this class of cases, after a varying period of time, when the temporary dressing is removed, that the integument down to the point of avulsion or severance has preserved its vitality, and it only remains to dissect so much of the projecting bone shaft as may be needed to secure an ample covering for the end.

Flood, a railroad surgeon of ability and large experience, has called attention to the frequent efficacy of scar-stumps after destructive necrosis of the limb.

In cases of dry mortification the stump may be formed in a singular manner. The mangled limb, after the bleeding is arrested, thoroughly cleansed, and properly dressed, is set aside in a comfortable position. Should the circulation be entirely destroyed decomposition will immediately begin; the cuticle becomes black, dry, and shrunken up to the line of demarcation. Here, again, nature shapes the flap, and there need be resected only sufficient of the shaft to permit the soft parts to comfortably cover in the divided end.

In secondary amputations, after purulent infiltration, there is seldom any lack of integument, but it may be highly inflamed, thickened, and edematous. While in some cases it may be advisable to amputate through healthy integument, in a vigorous subject, under proper care, where erysipelas is absent, an amputation directly through the inflamed parts is usually followed by an immediate abatement of the most urgent symptoms. The repair will be hastened by a good environment, free drainage, and antiseptic dressings.

As to secondary amputation during the progress of gangrene, when it is doubtful where an amputation should be made, a guide may be found in the temperature of the parts. The blade should be carried through those tissues that are yet warm and yet the seat of free oxygenation, the parts yet vital and hence capable of regenerative activity. Not infrequently this will be followed by immediate cessation of virulent inflammation, and repair rapid and complete.

Amputation in continuity and not contigentiquity may very frequently be resorted to with signal advantage in various types of spreading traumatic gangrene. An articulation is spared, and a stump, no matter how short, with a whole joint, is always of inestimable value to the patient.

It is often advisable in gangrene following crushes, punctures, or lacerations of the hand or foot, to amputate. Limb and life so often are threatened by a mixed infection, suppuration, and gangrene. Such cases occur more commonly in the spring season and frequently assume an erysipelatous character.

The local condition of the parts in this class is often not of so much consequence in guiding time and action as is the general condition of the patient. In the old, or those broken in health, or the subjects of constitutional disease, or those whose systems are supersaturated with the toxemia of infection, who are suffering from traumatic gangrene, amputation is of no avail.

TRAUMATIC ANEURISM OF THE SUBCLAVIAN ARTERY PRODUCED BY FRACTURE OF THE CLAVICLE.

TAYLOR (*Annals of Surgery*, November, 1903) reports the case of a man aged sixty-two years who sustained a fracture of the left clavicle. The patient continued to work, wheeling gravel in a wheelbarrow, nearly forty-eight hours before presenting himself for treatment. Some swelling was noticed at this time, but it was thought to be inflammatory in nature. Two weeks later pulsation could be seen and felt in the swelling, which

occupied the lower part of the left posterior triangle of the neck, and extended forward under the sternomastoid muscle, and downward below the clavicle overlying the broken fragments. There was a loud bruit present. The skiagraph showed distinctly a spicule of bone projecting downward at right angles from the end of the inner fragment.

Medical treatment was tried for a fortnight, but the aneurism increased in size, and was on the point of rupture when operation was undertaken. An attempt to expose the subclavian artery on the proximal side of the aneurism was unsuccessful. The inner two-thirds of the clavicle was resected; the tumor was then freely incised and the clots turned out. A small opening was found in the upper anterior aspect of the subclavian artery. The opening was closed by means of hemostatic forceps and the operation completed. The forceps were removed on the twelfth day, after which the wound rapidly granulated. Except for slight paresis of the left upper extremity the patient made an uneventful recovery.

The author has collected from the French and English literature all of the cases in which complications of fracture of the clavicle have been reported. He was able to find ten cases of injury (immediate or remote) to the neighboring nerves. There have been four authentic cases of wounds of the subclavian artery in addition to the one reported by the author. The subclavian vein has been injured in four instances and the internal jugular vein in two. In one case there was an aneurism of the acromion branch of the acromiothoracic axis, and in five cases there was wound of the lung associated with emphysema.

REPEATED CAESARIAN SECTIONS.

GREEN (*Boston Medical and Surgical Journal,* Oct. 8, 1903) seeks to prove that it is not justifiable in performing Cæsarian section to remove normal organs or to resort to other procedures with a view to preventing subsequent pregnancy.

He reports nine repeated sections. In one case there were no adhesions; in seven cases there were more or less adhesions. The duration of the operation was from thirty-nine minutes and twenty seconds to one hour and twenty-four minutes. In the one case that died of shock, the duration was forty-eight minutes. In one the uteroabdominal adhesions were so extensive that the fetus was delivered without opening the peritoneal cavity, and the time of operation was thirty-eight minutes. The nine infants were discharged well, and of the nine mothers, one died, a maternal mortality of 11 per cent.

RECURRENT DISLOCATION OF THE ULNAR NERVE.

COBB (*Annals of Surgery,* November, 1903) states that recurrent dislocation of the ulnar nerve at the elbow may occur (1) from non-traumatic causes (the so-called habitual, congenital, or idiopathic cases); (2) from trauma.

The cases of habitual dislocation are much the more numerous, but rarely require operation, and as a rule yield to simple palliative treatment. Abnormal mobility of the ulnar nerve is not uncommon, and may be present to the extent of complete luxation around to the front of the internal condyle without causing any symptoms. Colinet found that in five hundred persons the nerve slipped completely forward on flexion of the forearm in thirteen, and in five of these the dislocation involved both nerves. Drouard found complete luxation in three out of two hundred patients. The author found one case in a series of one hundred and fifty large, well developed men. Darting pain along the course of the nerve is caused by the trauma of the oft-recurring jumps over the condyle, and in a comparatively short period of time pathological changes take place in the nerve and its sheath. In most of the cases operated upon the nerve is found to be distinctly enlarged, and fusiform in shape. The one reported case in which examination of the nerve structure was made showed a typical neurofibroma, with marked thickening of the nerve sheath.

The author reports a case of traumatic dislocation which he operated upon. It was found at operation that the bony groove, previously and normally occupied by the nerve, had become completely filled up by fibers of the triceps muscle. These were dissected up from their abnormal insertion, and after the nerve had

been placed in its groove these fibers and a portion of the fascia of the triceps were carefully sutured to the fascia covering the flexor carpi radialis, thus making a roof over the nerve and its canal. The arm was kept on a splint for three weeks. At no time after operation was there any pain. The patient was allowed to use his arm at the end of four weeks. Two years has elapsed since operation, and the patient is able to use his arm in all ways and regards himself as absolutely cured.

The author concludes that operation for this condition has every chance of perfecting a cure, basing this on a statistical study of fifteen cases. Operation should be undertaken only in those cases in which the symptoms are severe and disabling. The steps of the operation are simple and will necessarily be the same in the majority of cases.

FRACTURE OF THE MANDIBLE—METHOD OF WIRING.

The various methods recommended and used for the treatment of fracture of the mandible appearing in many instances to be failures or only partly successful, McCURDY (*Annals of Surgery,* November, 1903) has devised a way which he believes reasonably guarantees an adjustment of the fragments. He has used this method in many cases with uniform success.

A hole is driven through the mandible from the external surface of the bone into the sublingual cavity. The drill hole should be made between the apices of the second and third teeth from the lines of fracture when this is possible, that a firm anchorage for the wires may be obtained. The drill holes when made are threaded with a notched drill. The wire is now passed through from without into the mouth on one side; it is then drawn out with the thread through the drill hole on the other side. The loop on the inside of the bone is now molded to the surface of the mucous membrane. The free ends are twisted to bring the ends of the bones in perfect apposition. The wire is now turned up along the remaining teeth so that the ends may not irritate the mucous membrane of the lip.

When one side has a tendency to drop, the drill hole should not be on the same plane. The hole in a high fragment should be well up to the gingival margin, and the one in the lower fragment close to or below the dental canal. Sometimes, usually in fractures near the angle, only one hole is required, teeth being used for anchorage. The wires are permitted to remain in position for about six weeks, longer if union has not taken place. Bandages and swaddling cloths are not necessary; the patient soon learns to hold the teeth together.

If infection comes on an ice-cap should be applied directly to the face. Under this treatment suppuration occurs but seldom. The mouth should be cleansed every hour or so with some strong antiseptic.

Before the adjustment of the fragments the field should be thoroughly cleansed with 50-per-cent solution of alcohol.

Iron wire is found superior to silver wire, being tougher and less irritating.

The method of feeding has been to pass a curved glass tube behind the back teeth into the mouth. A fountain or other syringe can be used to carry liquids into the oral cavity. Patients in many cases can suck the liquid from a glass with ease provided the tube is made with sufficient curve to permit closure of the lips.

HASTENING OF EPIDERMIZATION.

In his paper published in the *Carolina Medical Journal* for October, 1903, McGUIRE has for his subject the discussion of methods which hasten healing of cutaneous surfaces where the process is slow or at a standstill. Only the results of practical experience are presented.

The first step in epidermization should be to stop suppuration, and the second should be to stimulate normal regeneration and to protect the embryonal cells resulting. In case these two steps are insufficient a third should be undertaken to augment nature's reparative forces by grafting the bare area with epithelial tissue of sufficient vitality. These three indications for treatment, which must be followed in the management of every granulated wound, whether it be a small ulcer or an extensive burn, are discussed by McGuire collectively under the different dressings commonly employed.

The first treatment usually tried is a

moist dressing. The method of application consists in saturating a bit of absorbent cotton with the fluid selected and applying it to the raw surface, preventing rapid evaporation with a layer of oiled silk. The cotton should be wet as often as it becomes dry, and should be changed as often as it becomes soiled. The solution should not be a strong antiseptic, as that would kill cells as well as germs, but it should have an inhibitory action on microbic life. The three solutions most satisfactory are chloral hydrate solution (chloral hydrate 1 drachm, water 2 ounces); Thiersch's solution (salicylic acid ½ drachm, boric acid 3 drachms, water 2 ounces); and acetate of aluminum solution (alum 6 drachms, acetate lead 9½ drachms, water 2 ounces). All three may be used either hot or cold, and should be employed in conjunction with rest and elevation.

Treating granulated surfaces with dry antiseptic powders in most instances does harm. When first applied decided improvement is seen, but continued use is followed by irritation, due to absorption of serum and the formation of crystalline concretions that act as foreign bodies, or to broad incrustations that prevent the escape of pus or other wound secretions.

Concerning oleaginous dressings McGuire believes that vaselin, lanolin, and castor oil, plain or medicated, will give better results in some cases than any other applications. In extensive burns successful results have been obtained in the early stages by the use of a 5-per-cent mixture of ichthyol and vaselin, and in sluggish granulations, especially of tuberculous character, similar results have come from an application of a combination of 1-per-cent carbolic acid, 5-per-cent Peru, and 94-per-cent castor oil. Considerable benefit will sometimes be derived, especially in the treatment of a granulating wound, from a dressing that supplies food directly to the germinal cells and their offspring. Meat juice that is sterile, containing no alcohol, and rich in foodstuff, is an excellent nutritive dressing. It should be diluted with three-fourths water, warmed to the temperature of the body, and applied on cotton in the form of a moist dressing. As soon as pale granulations become pink and healthy this nutritive dressing has fulfilled its function and should give place to some other dressing. Among the newer preparations to be used as alterative dressings, protonuclein may prove effective in the treatment of indolent or foul granulating areas that have defied other lines of treatment.

Protection of the wound is best accomplished by interposing some impervious material between the granulation and the meshes of the overlying gauze. The best results follow the use of strips of rubber dam, collodion film, or Cargile membrane, placed latticewise. The rubber dam, of course, can be sterilized by boiling. Collodion film may be prepared by pouring collodion on an antiseptic glass; when it has hardened, it may be cut into strips. Cargile membrane is made from the peritoneum of the ox, and can be bought in germ-proof envelopes.

In skin-grafting, if the surface of the wound be fresh, care must be taken to perfectly arrest hemorrhage before applying grafts. If the surface be not fresh suppuration must be stopped before applying grafts. Three methods are recognized in skin-grafting. In Reverdini's, small particles are cut from the superficial layers of the skin with scissors, and planted at intervals on the surface to be covered. In Thiersch's, broad strips are cut from the superficial layers of the skin and placed so as to completely cover the wound area. In Wolfe's, a piece of skin is dissected the entire thickness of the structure and then fitted to the wound. The dressing for any of these methods consists of lattice-work or protective strips; over this is placed a bit of gauze wet with normal salt solution. At the end of the third day this should be removed and replaced. Subsequently the case should be managed on general surgical principles. Skin-grafting is so simple and the results are so immediate and satisfactory that the surgeon who does not avail himself of it in suitable cases does an injustice both to himself and to his patients.

Primary skin-grafting is done after the removal of the epithelioma or other superficial growth, provided, however, that infection be prevented, hemorrhage arrested, and ligatures and sutures avoided. The depression following the removal of tissue fills up beneath the skin, making the depression less than expected.

Secondary skin-grafting is done when ligatures are used to arrest bleeding or when sutures are used to secure coaptation, where infection exists or may be expected, or where the excavation is deep and a large amount of granulated tissue is necessary. In operating for cancer of the breast where approximation of the margins of the wound is secondary to extirpation of the diseased tissue, the malignant growth should be removed as completely as possible. The cut edges of the skin are then to be brought together as nearly as practicable. A protective dressing is now to be applied. In a week or ten days stitches should be removed and the granulating area skin-grafted.

Reverdini's method is employed where the area to be covered is small and where the administration of a general anesthetic is contraindicated. Both the surfaces to be grafted and the site from which the grafts are to come should be prepared. By means of a sharp tenaculum the skin is elevated into a cone, and then a small piece of it is snipped from its superficial layer with a pair of curved scissors. The fragment, transferred at once to the graft-area, should be seated on the granulations. Care is to be taken to prevent the edges curling inward; the curling would prevent apposition of raw surfaces. The grafting is repeated until a sufficient number of grafts have been planted to stud the bare area thickly. Spraying with chloride of ethyl makes the cutting of the skin painless. The space between the grafts is rapidly covered. The resulting scar is good. Reverdini's method is very satisfactory in weak, nervous persons.

Thiersch's method should be used when the surface to be covered is large and when the patient is under an anesthetic. The grafts are obtained by making the skin tense or flat either by hand or special hooks, and then by cutting off the superficial layers by a to-and-fro motion of a sharp razor. The larger the size of the grafts the better. They are usually an inch wide and four or five inches long. Care should be taken to remove only the upper layer of the skin, otherwise the wound inflicted may prove as difficult to cure as the wound the surgeon is trying to remedy. As cut, the grafts are dropped into a warm saline solution. After this they are placed carefully on the area to be grafted, the edge of one graft overlapping that of its neighbor. This method of skin-grafting gives the most brilliant results.

In exceptional cases Wolfe's method may be employed. The surface of the area to be grafted is thoroughly cleansed, and the margins are made fresh and vertical. All bleeding is to be completely arrested. The entire thickness of the skin is to be removed, but with no subcutaneous fat. To permit of closure of the dissected portion by sutures, the outline of the incision should preferably be an ellipse. To allow for shrinkage the skin removed should be one-third larger than the defect to be covered. The graft may be retained in its new position by sutures or by overlying dressings. In one case there was planted a single piece of skin having an area of some sixteen square inches. This graft was obtained in the retrenching of the scrotum of a man for varicocele, and was planted on a woman who had been operated on some days previous for cancer.

The only reasonable sources from which to obtain vital epithelial tissues are the skin of the patient (autografts), the skin of another person (heterografts), and the skin of a lower animal (zoögrafts).

Autografts are usually cut from the patient's thigh or shoulder. As they are most likely to prove successful they should always be employed except where the patient's general condition is bad, or where the area to be grafted is very extensive.

Heterografts may be obtained from amputated extremities or from fresh cadavers. They grow well when secured from a satisfactory source. They carry the danger, however, of infecting the patient with syphilis, tuberculosis, and other diseases.

In McGuire's experience (one case) skin from a white man's leg planted on a negro's leg was as white two years afterwards as on the day planted. This does not, of course, settle the question as to whether or not pigment is lost when black skin is transferred to white, but McGuire, because of this one case, has been deterred from making the reverse experiment.

Zoögrafts may be obtained from the frog, chicken, pig, cat, dog, rabbit, or guinea-pig. As they do not grow as rapidly as grafts from human skin, they

should not be employed except when no other grafts can be obtained. Experience seems to prove that where large areas require covering the necessary grafts may be obtained from the ordinary pig. The pigskin, of course, must be carefully prepared. The preparation consists of shaving and frequent scrubbing in antiseptic washes. A sow pig is preferable, as such pigs are said to be easier to keep clean.

PROLAPSE OF THE URETER THROUGH THE BLADDER AND URETHRA.

HIBLER (quoted in *Centralblatt für Gynäkologie,* Oct. 17, 1903) reports the case of an apparently healthy girl six weeks old who suddenly developed a pedunculated tumor the size of a hen's egg, pear-shaped, and cystic in character, at the external urinary meatus. The cyst ruptured several hours after its appearance. After excision of the cyst walls the child developed uremic symptoms and died. The cyst consisted of a prolapsed left ureter, which was atrophied and impermeable at its vesical end. The left kidney was provided with a second ureter which opened into the bladder. The right ureter presented evidence of dilatation.

ENTERECTOMY.

CAIRD (*Medical Press and Circular,* Nov. 11, 1903) reports eleven cases which were operated upon for tubercular stricture of the intestine. The stricture may be caused by: (1) a papillary outgrowth in the lumen of the gut; (2) an annular fibrous diaphragm occluding the bowel; (3) a bobbin-like obstruction due to thickening of the wall of the intestine.

The majority of cases were observed before the thirtieth year, though in several instances the sufferers were in advanced life. The ileocæcal region was most commonly affected, and in making a diagnosis, chronic inflammatory conditions arising in connection with the appendix, and malignant disease, were the most important of the other possibilities to be considered.

The history of these cases was usually one of chronic ill health, extending over a number of years, with constipation, colicky pain, abdominal tenderness, borborygmus, and vomiting as the most prominent symptoms. Hematemesis, diarrhea, melena, and hemorrhoids were met with less frequently. On examining the abdomen, peristaltic movements, giving rise to ladder patterns, could be made out.

Enterectomy in these cases was rendered difficult by the existence of adhesions. Sometimes it was possible to shell out a loop of bowel from a mass of surrounding tissue, but there frequently was too much infiltration to allow of this.

When the gut was surrounded by quantities of inflammatory material, and the mass attached as well to the adjacent viscera, it was found advisable, after dividing the bowel above and below and uniting the healthy ends, to bring the two diseased ends of the gut to the skin surface, and allow them to discharge there. An intestinal anastomosis, short-circuiting the bowel, might be better.

Of the eleven cases, four had died and seven recovered, three being alive from five to ten years after operation. Three of the oldest patients died; it thus appears that the prognosis is better in young patients.

Commenting on the post-mortem results, the author draws attention to the comparative frequency with which tuberculous lesions of the abdomen were complicated by malignant disease, and the difficulty which sometimes existed in differentiating between them, even histologically. In the author's series of cases, he had one probably associated with sarcoma, another with colloid cancer.

Reviews.

A TREATISE ON MASSAGE. By Douglass Graham, M.D. Third Edition, Revised, Enlarged, and Illustrated.
Philadelphia: The J. B. Lippincott Co., 1902.

The name of Dr. Graham is as closely connected with the introduction of scientific massage into this country as is the name of Dr. Baruch with the employment of hydrotherapeutic measures for the cure of disease. The first edition of this work appeared in 1884, and was the first book on massage to be published in the English language. The present edition deals thoroughly with this important non-medicinal remedial measure. After introductory chapters upon the history and mode of application and on the physiological effects

of massage, the author proceeds in subsequent chapters to deal with its employment in various conditions of disease, such as neurasthenia and anemia; then with massage of the internal organs, with special chapters upon massage, exercises, and baths in cases of cardiac disease, and upon the effects of these measures on the expansion of the lungs. Additional chapters contain descriptions of the results to be obtained by the use of massage in diseases of the nervous system, for sprains and bruises, for diseases of the joints, and in gout.

The author dedicates his book to the "Faculty of the Jefferson Medical College in his Student Days." We wish that every graduate could be credited with such a useful and practical contribution to medical literature.

The only criticism we have to offer is that the book might contain more illustrations to aid in the description of some portions of the text.

So much can be done by massage in the treatment of disease that physicians and trained nurses would do well to become possessed of this volume, and carefully study the methods which Dr. Graham has so clearly described for practical use.

A Reference Handbook of the Medical Sciences. By Albert H. Buck, M.D. Volume VII. Copiously Illustrated in Black and in Colors.
New York: William Wood & Co., 1904.

The present volume of this most excellent encyclopedia begins with an article upon saccharin and concludes with one upon the various forms of ulcer. Because of its alphabetical arrangement, it contains articles on such important subjects as the thyroid gland, the tongue, the tonsils, transfusion, tropical diseases, tuberculosis, and typhoid fever. The plates fully maintain the excellence which we are accustomed to in previous volumes. The article on typhoid fever contains much information in regard to its diagnosis, and particularly concerning its treatment, and is written by Dr. George B. Shattuck, of Boston. We notice that he quotes largely from such writers as Sir William Jenner, Todd, and Murchison. While it cannot be denied, on the one hand, that these clinicians had opportunities which make their opinions of very great value, it must also be remembered that the type of typhoid fever seen by them differed so largely from that seen by physicians at the present time that much of their advice cannot be accepted as high authority for modern conditions.

When a series of volumes appear one at a time, and each one deserves words of praise, it is difficult to find new phrases to express commendation. This is particularly true with this encyclopedia, which when it first appeared many years ago at once obtained for itself an enviable position in the confidence of the profession, and which in its new edition is so improved that it cannot fail to be received with increased favor. The physician who has these volumes possesses a library dealing with medicine in all its branches.

A Compend of Pathology, General and Special. By Alfred Edward Thayer, M.D. Second Edition.
Philadelphia: P. Blakiston's Son & Co., 1903.

In 1902 Dr. Thayer printed two Compends of Pathology which are now merged into a single volume, with the addition of a chapter upon the Pathology of the Nervous System. At the present time the book is a small octavo volume of little over 700 pages, printed on rather thin paper with a flexible binding, and so readily used as a manual. The illustrations are quite numerous, but most of them could be considerably improved. A number of them are taken from Stengel's Pathology, and still others from Delafield and Prudden's book.

As a brief condensation of our present knowledge in regard to pathology, the book is complete, but the student of medicine in studying this branch should not be content with so limited a manual, but should employ in addition a more exhaustive work, using this one for the purpose of testing and renewing his pathological knowledge.

The Right to Life of the Unborn Child.
New York: Joseph F. Wagner, 1903.

This brochure deals with the subject expressed in its title, the author taking the ground that interference during pregnancy is justifiable if it is necessary for the good of the mother. He rather savagely attacks those officers of the Roman Catholic Church who enforce the ecclesiastical law against such interference.

A Compend of Diseases of the Ear, Nose, and Throat. By J. J. Kyle, B.S., M.D.
Philadelphia: P. Blakiston's Son & Co., 1903.

This is one of Blakiston's Quiz-Compends, which as a class has been before the profession for nearly thirty years. It is open to the objection to which all such compends are open, but on the other hand, as with most of the other volumes in this series, it is a very good book of its kind. The author states in the preface that he has made use, whenever he thought it necessary, of the information obtainable in the larger and standard works upon this department of medicine.

Stories of a Country Doctor. By Willis P. King.
Chicago: The Clinic Publishing Co., 1903.

Ten or more years ago we noticed in the Gazette the appearance of the first edition of this book. The stories are known to many of our readers, and deal with various phases of medical and non-medical life in the western portions of the United States. Many a tired physician has laughed heartily over the anecdotes and illustrations in Dr. King's book, and we have no doubt that in its new dress it will continue as popular as it was when it first appeared some years since.

The Practical Care of the Baby. By T. W. Kilmer.
Philadelphia: F. A. Davis Co., 1903.

Unlike most books which have been published within recent years upon this subject the author has managed to state the facts that he wishes to bring before us in a small octavo volume of about 150 pages. The book is one which is intended more for the mother and nurse than for the physician, and its text and illustrations are, as a rule, excellent. The illustration on page 54, showing the method by which a rectal injection should be given to an infant, is extremely faulty because the bag is hung so high that the hydrostatic pressure is far in excess of that to which a child's bowels should be subjected. Eighteen inches is certainly sufficient. The present picture shows the bag at an elevation of four or five feet. Curiously enough the pictures, which are evidently taken from photographs, are taken from life so far as the nurse is concerned, but from dolls so far as the child is concerned.

Treatment of Fractures. By Charles Locke Scudder, M.D. Fourth Edition, Thoroughly Revised; 688 Illustrations.
Philadelphia, New York, and London: W. B. Saunders & Co.

This book, designed as a guide to the practitioner and student in the treatment of fractures, is singularly clear and direct in its teaching, and is admirably illustrated. In place of the expressions "compound" and "simple," the author uses "open" and "closed," and in the main is an earnest advocate for mechanical simplicity, though this might not be apparent from a perusal of that section devoted to the treatment of fractures of the lower jaw.

In the section devoted to fractures of the skull, perhaps as much attention as this subject deserves is not given to the question of post-traumatic edema. He holds that operative interference is demanded in penetrating or sharply depressed fractures.

Fractures of the nasal bones are reduced by intranasal manipulations. There are some very striking pictures of emphysema following fractures of the ribs. The treatment of fractured clavicle is according to recognized principles, and, as might naturally be expected, there are modifications of the Sayre dressing to suit individual cases. Operative treatment is advised where the deformity is great and cannot be held in reduction. Suturing is the method of choice.

Fracture of the humerus is treated at considerable length, and justly so, because of the disability which often follows from its incorrect adjustment. In fractures about the elbow-joint the position of forced flexion is the one preferred in suitable cases. There should, however, be no pain associated with the maintenance of this position.

In fractures of the neck of the femur the fixation method of treatment by Thomas's splint is advised, excepting in young adults, on whom operation by pegging may be practiced, providing the absolute fixation by the Thomas splint after a reasonable time has not effected union. Fractures of the shaft of the femur are treated by Buck's extension.

There is appended to the list of fractures a small section on luxations, particularly those of the cervical vertebræ and of the jaw, well worth careful study.

In the text the author has given such minute and careful directions for individual dressing that even one without hospital experience might by a careful study of this work treat the fractures he would be likely to encounter in an intelligent and modern way.

ANATOMY. Manual for Students and Practitioners. By Henry E. Hale, A.M., M.D. Medical Epitome Series, Edited by V. C. Pedersen, A.M., M.D. Seventy-one engravings.
Philadelphia and New York: Lea Brothers & Co., 1903.

This epitome, evidently designed for the student, is based on the standard work of Gray, and has been boiled down with an eye to the needs of examination. It seems particularly well adapted to the purpose for which it was written. There has been much adverse criticism of condensed works of this kind. If well done, however, and this can truly be said of the present book, they are distinctly valuable, as is proven by their popularity with medical students.

ELEMENTS OF SURGICAL DIAGNOSIS. By A. Pearce Gould, M.S. Lond., F.R.C.S. Eng. Third Edition, Revised and Enlarged.
Chicago: W. T. Keener & Co., 1903.

A new edition of this book, revised and enlarged, is thoroughly acceptable, since though the first edition was not widely popular it contains so many elements of value that those who became familiar with it learned to place great dependence on its teaching. This book is meant to lay the foundations of surgical diagnosis rather than to outline a particular method of arriving at the diagnosis in individual cases. In other words, it deals with principles which once thoroughly established in the practitioner's mind enable him to apply them to individual cases.

There is an excellent introductory chapter dealing with the methods of examination and with general symptoms. Then follow the diagnosis of injuries, including of course wounds, contusions, ruptures, dislocations, and fractures. There is a section on diagnosis of swellings and tumors, inflammation, gangrene, diseases of the joints and bursa. Thereafter follows the diagnosis of the various affections considered from a regional standpoint.

The most experienced surgeon cannot fail to derive benefit from the possession of this excellently arranged book, and the general practitioner who has occasional dealings with surgical cases should find it invaluable.

NON-SURGICAL TREATISE ON DISEASES OF THE PROSTATE GLAND AND ADNEXA. By George Whitfield Overall, A.B., M.D.
Chicago: Rowe Publishing Co., 1903.

In these days of strenuous therapeutics the tendency of which steadily seems to be toward operative measures, the appearance of a work devoted to non-surgical treatment of the prostate gland and adnexa cannot but be a refreshing surprise. When, however, it is found that the author places his trust in electrolysis and cataphoresis for the purpose of stimulating vasomotor action, relieving thereby congestion and inflammation, dissipating morbid tissue, and chemically decomposing the lime and earth concretions that form in the ducts and follicles of the prostate, his reason for rejecting the surgeon and his knife can be understood.

To those interested in the opinions of the enthusiastic believer in the efficacy of electricity the volume may prove interesting reading.

Correspondence.

LONDON LETTER.

BY GEORGE J. STILL, M.A., M.D., F.R.C.P.

The inexhaustible interest of medicine is perhaps nowhere more evident than in the never-ending round of society meetings. Here in London there is a veritable *embarras de richesse* in the matter of medical societies; one might attend such meetings every night of the week except Sunday, and on some evenings it is only the lack of any convenient provision for being in two places at once which prevents one from attending, say, three or four societies within the space of two hours. As a general rule the communications are all of a high order, and of late the increasing use of lantern demonstration, and at two of the societies the use of the epidiascope, have added greatly to the interest of the meetings.

At the Clinical Society the etiology and treatment of gastric ulcer has recently

been under discussion. The treatment of this condition when complicated by severe hemorrhage or perforation has been passing during the past few years more and more into the hands of the surgeon, and, as the results seem to show, with very good reason; but it would seem that even when there are no complications and the only trouble is intractable dyspepsia or dilatation of the stomach associated with gastric ulcer, the physician is now to give way to the surgeon. Mr. Moynihan reported 100 cases of gastric ulcer treated by operation, and out of these 85 were uncomplicated cases. The whole mortality was two—*i.e.*, two per cent—and of the 85 uncomplicated cases only one died. There were 44 males among the 100 cases, and the ages varied from seventeen years to sixty-two years. The operation done was gastroenterostomy, and the walls of the stomach and intestine were simply stitched together; no mechanical appliance of any sort was used. Mr. Moynihan stated that he operated upon about a fourth of the whole number of cases of chronic gastric ulcer in which he was consulted. He thought that the operation ought not to be considered a last resource; if done earlier it might prevent much suffering.

It would have been interesting to have heard something more of the medical aspect of this important question; the mere fact that an operation relieves or even cures a disease does not by any means prove that it is the best or even a justifiable method of treatment in any but exceptional cases—unless indeed it is clear that the condition is not amenable to simpler methods. One physician, Dr. Edmund Cantley, expressed his opinion definitely that gastric ulcer did not as a rule require any such radical treatment; and one or two remarks made by other physicians in the discussion rather suggested doubts as to the expediency of any routine operative procedure.

A curious suggestion as to a possible cause of gastric disease in adults was made by Mr. A. E. Maylard at the same meeting. He read a paper in which he attributed such disease to congenital narrowness of the pylorus; the evidence however of any such obstruction in infancy in these cases was not forthcoming, and the congenital or even infantile origin cannot therefore be regarded as proven.

The important subject of functional albuminuria was discussed recently at the Medical Society. The general feeling seemed to be that albuminuria must always be viewed with suspicion; it often means renal disease past or present; intermittence of albuminuria is common during convalescence from nephritis; previous damage to the kidneys by various acute diseases might leave a tendency to albuminuria from very slight causes. Dr. Pavy thought that the term "functional" is more appropriate than "physiological" as applied to the cases of albuminuria under consideration. The question whether casts are ever present with a purely functional albuminuria has been much debated; some observers have described them as present occasionally in small numbers, but Dr. Pavy said that if there were any casts he would refuse to allow that the albuminuria was "functional." This is obviously a point of great importance both in prognosis and in treatment. According to Dr. Pavy, however, even if the albuminuria is truly functional it may in a certain proportion of the cases be the precursor of definite renal disease. Dr. Samuel West considered that there is a distinct increase of risk to life where functional albuminuria is present, especially in persons over thirty years of age.

Anything new in the way of treatment for whooping-cough has always some interest, for probably there are few diseases which have taxed the resources of the Pharmacopœia as pertussis has done. Dr. Ker has recently advocated the use of open air treatment for the most fatal of all the complications of whooping-cough, namely, bronchopneumonia. By this method he reduced the mortality due to bronchopneumonia from 71 to 26 per cent. The only contraindications are laryngitis and convulsions. The precautions taken were practically the same as those usually adopted in the open-air treatment of tuberculosis. The most obvious effects were improvement of the appetite and increased sleep; the paroxysms and the temperature were not affected, but tubercle, which as every one knows who has seen much of the morbid anatomy of whooping-cough is too commonly a complication of that disease, was observed much less frequently.

The treatment of enlarged prostate is still under discussion. At the Harveian

Society Mr. Mansell Moullin stated that in his opinion so long as catheter life can be carried on successfully with passage of a catheter not oftener than twice in the twenty-four hours, nothing further need be done; but too often sooner or later attacks of local congestion occur, making the passage of a catheter more and more difficult, there is frequent hemorrhage, and eventually in most cases some sepsis takes place, with all its attendant train of evil results. When the obstruction is due chiefly to prostatic overgrowth there is at this late stage no alternative but operative procedure of some kind. In some cases division of the vasa deferentia checks the tendency to recurring attacks of congestion. Mr. Moullin thought that castration, while it had undoubtedly been overpraised at first, has now fallen into a not altogether deserved discredit. The success, however, of the various methods of actual removal of the prostate is now such that this more radical method of treatment has become general, and undoubtedly no procedure has given better results than removal through the bladder. The operation originally performed by McGill fourteen years ago is practically the same as that now in general use.

To one statement there was considerable exception taken. Mr. Moullin had declared that as the result of habitual catheterization the bladder would lose its contractility in even so short a period as two years. Mr. Buckston Brown quoted a case in which after twenty years of catheter life relief by operation was followed by perfect action of the bladder; and Mr. Freyer said that there is no such thing as atony of the bladder as a permanent condition, and that not a single instance is known to have occurred. Mr. Freyer hoped that vasectomy and castration were things of the past in this country. Some speakers thought that if proper care were taken to insure asepsis in catheterization the outlook would be much more hopeful than has been suggested, and that in many cases operation never becomes necessary.

I need not refer in detail to the admirable lecture which was recently delivered by Sir Hermann Weber before the Royal College of Physicians on means for the prolongation of life. The lecture has since been published in full, but I cannot forbear from picking out some of the practical wisdom with which it abounds for the benefit of those who may not have the opportunity of reading it.

Oliver Wendell Holmes once said that the first thing to be done by him who would attain to a ripe old age would be to select two long-lived persons for his parents, and I note that foremost in this lecture stands heredity. But Sir Hermann is no fatalist on the matter of heredity; even if we cannot choose our parents he thinks we can influence heredity ultimately by cultivating a tendency to long life, particularly by well selected marriages. Next in the effort to live long he places exercise, particularly walking exercise, as invaluable, and to be taken in rain and shine alike; once a week he would have us take a long country walk lasting four or six hours, with such frugal fare as a sandwich and an apple or an orange, with the idea that the excretion of waste products is promoted thereby. More valuable still is a walking tour of three or four weeks in a mountainous district once or twice a year; this improves the action of the heart, increases the power for mental work, and enables one to face life's work and worry with a calm and even mind. To counteract the stiffness of old age special exercises are to be used, and respiratory gymnastics are to be practiced to prevent the tendency to senile emphysema and to improve the circulation.

On the subject of food Sir Hermann's advice is moderation in all things. As old age advances less food is required, and the quantity is to be diminished gradually. He deplores the neglect of that thorough mastication which is so essential to good digestion, but curiously enough seems to forget that the grinders may cease because they are few, not because there is any lack of willingness to use them. The value of regular brain work, not only in maintaining the mind in full activity in old age, but probably even in prolonging life, is also to be remembered. Early to bed and early to rise is Sir Hermann's principle with regard to sleep; he wisely abstains from laying down any rule as to the exact number of hours of sleep required, but any comfort which the sluggard might derive from this fact is disturbed by the quotation of John Wesley's example, who never slept more than six hours, and rose regularly at 4 A.M. for sixty years. The whole lecture is an am-

plification of Luther's motto, which is quoted: "Rast ich, so rost ich." Rest means rust; it is idleness as the years advance, not work, which hastens the wearing out of the organs.

PARIS LETTER.

By R. H. Turner, M.D. (Paris).

Professor Hayden, the well known stomach specialist, treats gastric ulcer in the following manner: The patient is put to bed and given very little food. The latter should consist of a quarter of a glass of milk given every two hours, this to be done during four days. Enemas are given thrice daily, consisting of:

Tepid water, 200 grammes;
Dry peptone, 30 grammes;
Yolk of 2 eggs.

This should be injected after a cleansing enema. The fourth day the quantity of milk may be increased to half a glass every two hours; the eighth day three-quarters of a glass may be given, and the twelfth a whole glass. Not more than three liters should be given. After twenty days, if the patient does not vomit and digests well, the quantity of milk may be diminished and solid food given progressively. This is given in the following order: milk soup, three times a day; soft-boiled eggs, broth, broth with the yellow of an egg, meat juice, custard; white meat, soft and boiled; mashed vegetables; and lastly, bread. Subnitrate of bismuth should be used to combat the gastric irritation; 20 grammes of subnitrate in 100 grammes of water may be given at one dose. This treatment may be continued eighteen days, and warm fomentations applied to the epigastrium. Later artificial Carlsbad water may be used, prepared in the following manner:

Water, 1000 grammes;
Sulphate of soda, 3 grammes;
Bicarbonate of soda, 2 gr. 50;
Chloride of sodium, 1 gramme.

The patient drinks 250 grammes the first day in three doses, 300 the second day, 350 the third day, and so on up to 500 grammes, this preparation being warmed. This should be continued not over a month. The whole treatment lasts about seventy days, and is very efficacious in recent cases.

A Russian physician, Dr. Preissmann, of Odessa, has employed a treatment for hemorrhoids which has given him excellent results, and which consists in the local application of glycerin and iodine. The following formulæ are used:

(1) Iodide of potassium, 2 grammes;
Pure iodine, 0.20 centigramme;
Glycerin, 35 grammes.
M. Weak solution.

(2) Iodide of potassium, 5 grammes;
Pure iodine, 2 grammes;
Glycerin, 35 grammes.
M. Strong solution.

The patient takes a tepid sitz bath, and then applies hourly small tampons of absorbent cotton dipped in one of these solutions. Later this is repeated less frequently until the hemorrhoids disappear completely.

In a recent number of the *Journal of Practical Medicine and Surgery* Dr. Foly recommends a method for checking the pain and hemorrhage in certain forms of blennorrhagic cystitis. He has a solution of 20 grammes of antipyrin for a liter of water prepared, and adds 5 to 10 grammes of laudanum of Sydenham (vinum opii). This is injected into the bladder by means of a soft-rubber catheter and a syringe, half a liter being injected in small doses at a time, and a certain amount being left in the bladder. This is done twice a day, and the results seem to be excellent.

At Unna's clinique at Hamburg peroxide of hydrogen 30 volume has been used as a treatment of nevi, a drop of the solution being applied twice a day and allowed to dry, the spot being then covered with oxide of zinc plaster. In two or three weeks the pigmentation disappeared.

At a recent meeting of the Medical Society of the Hospitals, Dr. Soupault, a well known specialist for stomach troubles, described a form of appendicitis which is sometimes seen in women at the menstrual period, and which is often mistaken for dysmenorrhea. There is, however, in this pain in the right iliac fossa, often enough somewhat below McBurney's point, slight diarrhea for one or two days, and nausea and vomiting. Symptoms of general infection are also manifest, such as headache, shivering, fever, high pulse (about 100). These symptoms often come on shortly before the periods, and cease at the end. An operation is found necessary when the

attacks have taken place a certain number of times.

Experiments were carried out last summer with Marmorek's antituberculous serum in Dr. Championnière's service at the Hôtel Dieu. Five patients suffering from the following diseases were inoculated: Pott's disease, tuberculous abscess of the hip, tuberculosis of the testicle with pulmonary tuberculosis. No real improvement was noticed. None of the patients with Pott's disease had abscesses as the result of the injections. Another, whose testicle had diminished in size, died three days later from tuberculous meningitis.

Dr. Vidal, a French military surgeon, has recently published in the *Archives of Military Medicine* an essay on the immunity of Arabs from typhoid fever. It is a well established fact that Arabs are predisposed to pneumonia, but that on the other hand few have typhoid fever. The reason for the infrequency of bowel trouble amongst them is to be found in their regimen, which consists in milk, eggs, dates, and various meal stuffs. The usual beverage is water or tea and coffee. Very little meat and no alcohol are taken. On the other hand they use a good deal of red pepper, cloves, thyme, saffron, mint, which have an antiseptic action. This may explain the rarity of intestinal troubles in Algeria and other lands where Arabs are found.

In an article on the treatment of hyposthenic dyspepsia, which is a disease frequently found in women, Dr. Martinet summarizes his medicinal treatment in the following manner:

1. At the beginning of the midday and evening meals, take in a glassful of liquid (excepting milk) one to three teaspoonfuls of the following mixture:

> Ordinary phosphoric acid, 5 to 10 grammes;
> Acid phosphate of soda, 20 grammes;
> Distilled water, 200 grammes.

At the end of the midday and evening meals take 50 centigrammes to one gramme of amylaceous pepsin in capsules, or in a granular form. Take two hours after the meal, in a little water, a teaspoonful of the following mixture:

> Essence of mint or badiane, 15 drops;
> Calcined magnesia,
> Cream of tartar, ää 30 grammes;
> Lactose, 40 grammes.

Shortly after drink a cup of chamomile tea or linden-tea, and in certain cases 50 centigrammes to one gramme of pancreatin (pills or granular form).

2. Every morning, later every other evening, take an enema of boiled water at a temperature of 36° C.

3. Every evening massage of the large intestine.

4. Wear an abdominal band in elastic tissue.

Dr. Verhoogen, a Belgian physician, has recently written an interesting article in the *Medical Journal of Brussels* on pneumonia in the aged. He insists on its onset being so insidious that death sometimes comes on suddenly. Dyspnea, however, is an important symptom. Convalescence is very tedious, lasting several weeks. The mortality is very high, being as much as fifty per cent when the patient has reached the seventieth year. The treatment is not active. Dry cupping and the hot pack will facilitate the pulmonary circulation. Cold applications are on the contrary dangerous. Tartar emetics should never be used. Digitalis is much better indicated than strychnine to sustain the heart. In the period of resolution small doses of iodides are to be recommended, and creosote is of use in preventing secondary infection.

A commission has recently been named by the director of the Assistance Publique to examine the question of using horse-meat instead of beef for a certain number of hospital patients. Raw meat is often ordered for tuberculous patients, and as the quantity used is increasing daily, it was thought well to see if some cheaper meat might not be used.

Brieux's famous drama, "Les Avariés," in which the disastrous consequences wrought by syphilis in the life of a family are described, has been completed by a novel, by Paul Bru, the director of the St. Antoine Hospital. It is called the "Insexuée," a word which is hard to translate, and which indicates the condition of a woman whose ovaries have been removed. The chief character is a woman, who is infected by her husband, a libertine affected with blennorrhagia, and after some months of suffering an operation is performed for the removal of her ovaries. Later insanity sets in.